Air Quality Permitting
Statement of Basis

January 13, 2004

PTC/Tier II Operating Permit No. T2-030300

Idaho Asphalt Supply, Blackfoot

Facility ID No. 011-00023

Prepared by:

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Air Quality Division

Final Permit

Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
Btu	British thermal unit
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
gr	grain (1 lb = 7,000 grains)
HAPs	Hazardous Air Pollutants
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
kPa	kilopascal
lb/hr	pound per hour
m	meter(s)
MACT	Maximum Available Control Technology
MMBtu	Million British thermal units
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM_{10}	Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
Rules	*Rules for the Control of Air Pollution in Idaho*
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	synthetic minor
SO_2	sulfur dioxide
T/yr	Tons per year
$\mu g/m^3$	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Sections 200 and 404.04, *Rules for the Control of Air Pollution in Idaho* (*Rules*) for PTC and for Tier II operating permits.

2. FACILITY DESCRIPTION

Process operations at Idaho Asphalt Supply include the storage, production, and distribution of asphalt binders including the following:

- Asphalt cements;
- Polymer-modified asphalt cements;
- Asphalt cutbacks; and
- Asphalt emulsions.

3. FACILITY/AREA CLASSIFICATION

Idaho Asphalt Supply is not a designated facility as defined in IDAPA 58.01.01.006.27 and not a major facility as defined in IDAPA 58.01.01.006.55 and IDAPA 58.01.01.008.10. The AIRS classification is "B" because the potential uncontrolled emissions of any regulated air pollutant are less than major levels. The facility's Standard Industrial Classification Code (SIC) is 2951, which refers to an establishment that is primarily engaged in manufacturing asphalt and tar paving mixtures.

The Idaho Asphalt Supply facility is located within AQCR 61 and UTM Zone 12. The facility is located in Bingham County which is designated as unclassifiable for all criteria pollutants in accordance with 40 CFR 81.313.

4. APPLICATION SCOPE

The purpose of this permit action is to consolidate current PTC's into a facility-wide PTC/Tier II operating permit which will incorporate and replace all existing PTC's and include emissions units not currently permitted. This permit was requested by the facility in order to protect trade-secret information, including storage tank dimensions and product composition recipes. The permit analysis was based on throughput volumes, formulations, and tank sizes which are not actual but predict higher potential emissions than actual. Accordingly, the permit analysis is a conservative estimate of emissions.

This Tier II operating permit and permit to construct incorporates and replaces the following permits:

- Permit to Construct 011-00023, issued April 13, 2001
- Permit to Construct 011-00023, issued April 8, 1993
- Permit to Construct 011-00023, issued November 17, 1992, was superceded by the April 8, 1993 PTC 011-00023.

The compliance test protocol for testing the CB500 boiler was submitted on May 8, 2002. The test protocol approval letter from DEQ was sent on May 13, 2002. The requirement to obtain a source test protocol was transferred from the previous permit because DEQ may require an updated protocol before a test is conducted since it has been more than a year since the approval letter was sent.

4.1 Application Chronology

1/15/03 DEQ received an application for a permit to construct and a Tier II operating permit.

2/26/03 DEQ received a fax from MSE regarding tank size ranges.

4/25/03 Application declared complete.

5/8/03 DEQ received request for a draft permit. The letter also summarized the topics discussed in a 2/26/03 meeting between MSE and DEQ.

7/17/03 DEQ received additional information and revised modeling for CO from MSE.

9/30/03 DEQ received modified throughputs and emissions from certain tanks and loading racks.

10/31/03 Proposed PTC/Tier II operating permit issued.

11/5/03 – 12/8/03 Public comment period

12/8/03 Comments received.

5. PERMIT ANALYSIS

5.1 Emissions Inventory

The emissions are evaluated in the technical memorandum dated October 17, 2003, Appendix A. A summary of the potential emissions are shown in Table 5.1.

Table 5.1 POTENTIAL TO EMIT

Source	PM/PM_{10} (T/yr)	NO_X (T/yr)	CO (T/yr)	SO_2 (T/yr)	VOC (T/yr)	HAPs (T/yr)
Tanks and Loading Racks	---	---	---	---	14.21	1.9578
Boiler CB500	2.33/2.00	11.27	8.04	9.60	0.61	0.14
Boiler CB400	0.55/0.55	7.21	6.06	0.04	0.4	0.14
Hot oil heater CEI-5000G	0.24/0.24	3.13	2.63	0.02	0.17	0.059
Hot oil heater CEI-3000	0.14/0.14	1.82	1.53	0.01	0.10	0.034
Total emissions	**3.26/2.93**	**23.43**	**18.26**	**9.67**	**15.49**	**2.33**

5.2 Modeling

The air dispersion modeling analysis is documented in the technical memorandum dated October 14, 2003, Appendix B. Summaries of the criteria and toxic air pollutant air dispersion modeling results are shown in Tables 5.2 and 5.3.

Table 5.2. FULL IMPACT ANALYSIS RESULTS.

Pollutant	Averaging Period	Actual Model Results µg/m³	Alternative Model Results µg/m³	Background Concentration µg/m³	Total Ambient Impact µg/m³	Regulatory Limit µg/m³	Demonstrates Compliance?
PM_{10}	24-hour	12.3	24.3	73	97.3	150	Y
	Annual	3.44	4.13	26	30.13	50	Y
CO	1-hour	470	522	3,300	3822	40000	Y
	8-hour	163	191	2,600	2791	10000	Y
SO_2	3-hour	198	486	33	519	1300	Y
	24-hour	71	161	26	187	365	Y
	Annual	2.06	8.29	7.3	15.59	80	Y
NO_2	Annual	43	47	17	64	100	Y

Table 5.3. TOXIC AIR POLLUTANTS IMPACT ANALYSIS.

Pollutant	Averaging Period	Actual Model Results µg/m³	Alternative Model Results µg/m³	Regulatory Limit µg/m³	Demonstrates Compliance?
Arsenic	Annual	2.3E-04	2.3E-04	2.3E-04	Y
Cadmium	Annual	5.2E-04	5.3E-04	5.6E-04	Y
Nickel	Annual	1.1E-03	1.3E-03	4.2E-03	Y
Benzene	Annual	7.4E-02	7.5E-02	1.2E-01	Y
Formaldehyde	Annual	5.6E-02	6.6E-02	7.7E-02	Y
HCl	24-hour	4.81E+01	1.05E+02	3.75E+02	Y

5.3 Regulatory Review

This operating permit is subject to the following permitting requirements:

IDAPA 58.01.01.401 ..... Tier II Operating Permit

A facility-wide Tier II operating permit was requested by the facility in order to replace all existing permits to construct and eliminate actual tank dimensions due to confidential business information concerns.

IDAPA 58.01.01.403(b) ..... Permit Requirements for Tier II Sources

A Tier II permit is required by DEQ because emissions limits and operating restrictions are necessary to ensure compliance with applicable emission standards and rules, as detailed in this memo.

40 CFR 60 Dc ..... Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

The CB500 boiler is rated at 20.5 MMBtu/hr, which is between 10 MMBtu/hr and 100 MMBtu/hr, and the PTC to allow the combustion of recycled waste oil as a fuel was issued on April 13, 2001. The regulation applies to boilers modified after June 9, 1989.

40 CFR 279 ..... Standards for the Management of Used Oil

This section applies to used oil burners.

40 CFR 60 Kb..... Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

This applies to three tanks: Nos. 29, 49, and 50. The tanks have capacities exceeding 151 m^3 and vapor pressures exceeding 15 kPa. The permit requires that the facility comply with the provisions of 40 CFR 60 Kb.

5.4 Fee Review

Fees apply to this facility in accordance with IDAPA 58.01.01.407. A fee assessment has been prepared for $5000 as calculated in Appendix D.

6. PERMIT CHANGES AND PERMIT CONDITIONS

This Tier II operating permit and permit to construct incorporates and replaces the following permits:

- Permit to Construct 011-00023, issued April 13, 2001
- Permit to Construct 011-00023, issued April 8, 1993
- Permit to Construct 011-00023, issued November 17, 1992

The requirements from the above-listed permits have been incorporated into the Tier II operating permit except as follows:

- The process description from the April 8, 1993 PTC has been expanded to include references to the hot oil heaters and to the capability of the CB500 boiler to fire on recycled waste oil, a modification made to the facility with the April 13, 2001 permit amendment.

- The emissions limits for the tanks have been increased.

- The rule references have been updated to the most recent reference (i.e., IDAPA 16.01.01 is now IDAPA 58.01.01).

- The typical throughput value description, the tank specifications listing showing actual tank dimensions and capacities, and labeling requirements for the tanks from the November 17, 1992 PTC had been eliminated from the PTC with the modified PTC issued on April 8, 1993, and have not been added back in to the current Tier II operating permit due to the facility's request to hold this information as confidential business information.

- The emissions limits for the CB500 boiler were reduced because the emissions were estimated using different emission factors than were used in the previous permit application. The modeled concentrations of arsenic and cadmium were very close to the regulatory increment as specified in IDAPA 58.01.01.586. The previously-permitted limits were not modeled and did not demonstrate compliance with the IDAPA 58.01.01.586 increment for this permit action. The SO_2 limit was not modified because the modeled SO_2 concentrations were much less than the NAAQS, so a permit limit revision was not required.

Facility-wide Conditions

6.1 Fugitive Particulate Matter - IDAPA 58.01.01.650-651

Requirement

Permit Condition 2.1 states that all reasonable precautions shall be taken to prevent PM from becoming airborne in accordance with IDAPA 58.01.01.650-651.

The specific fugitive dust requirements from the permits to construct which were incorporated into this PTC/Tier II permit were consolidated in this section.

Compliance Demonstration

Permit Condition 2.2 states that the permittee is required to monitor and maintain records of the frequency and the methods used by the facility to reasonably control fugitive particulate emissions. IDAPA 58.01.01.651 gives some examples of ways to reasonably control fugitive emissions which include using water or chemicals, applying dust suppressants, using control equipment, covering trucks, paving roads or parking areas, and removing materials from streets.

Permit Condition 2.3 requires that the permittee maintain a record of all fugitive dust complaints received. In addition, the permittee is required to take appropriate corrective action as expeditiously as practicable after receipt of a valid complaint. The permittee is also required to maintain records that include the date that each complaint was received and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

To ensure that the methods being used by the permittee to reasonably control fugitive PM emissions whether or not a complaint is received, Permit Condition 2.4 requires that the permittee conduct periodic inspections of the facility. The permittee is required to inspect potential sources of fugitive emissions during daylight hours and under normal operating conditions. If the permittee determines that the fugitive emissions are not being reasonably controlled the permittee shall take corrective action as expeditiously as practicable. The permittee is also required to maintain records of the results of each fugitive emission inspection.

Both Permit Conditions 2.3 and 2.4 require the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid complaint or determining that fugitive particulate emissions are not being reasonably controlled meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

6.2 Control of Odors - IDAPA 58.01.01.775-776

Requirement

Permit Condition 2.5 and IDAPA 58.01.01.776 both state that: *"No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids to the atmosphere in such quantities as to cause air pollution."* This condition is currently considered federally enforceable until such time it is removed from the SIP, at which time it will be a state-only enforceable requirement.

Compliance Demonstration

Permit Condition 2.6 requires the permittee to maintain records of all odor complaints received. If the complaint has merit, the permittee is required to take appropriate corrective action as expeditiously as practicable. The records are required to contain the date that each complaint was received and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

Permit Condition 2.6 requires the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid odor complaint meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

The facility is also required to submit an odor management plan to DEQ within 60 days of permit issuance. This requirement was added in response to comments sent in during the public comment period.

6.3 Visible Emissions - IDAPA 58.01.01.625

Requirement

IDAPA 58.01.01.625 and Permit Condition 2.8 state that *"(No) person shall discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than twenty percent (20%) opacity as determined . . ."* by IDAPA 58.01.01.625. This provision does not apply when the presence of uncombined water, NO_X, and/or chlorine gas is the only reason for the failure of the emission to comply with the requirements of this rule.

Compliance Demonstration

To ensure reasonable compliance with the visible emissions rule, Permit Condition 2.9 requires that the permittee conduct routine visible emissions inspections of the facility. The permittee is required to inspect potential sources of visible emissions, during daylight hours and under normal operating conditions. The visible emissions inspection consists of a see/no see evaluation for each potential source of visible emissions. If any visible emissions are present from any point of emission covered by this section, the permittee must either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of thirty observations shall be recorded when conducting the opacity test. If opacity is determined to be greater than 20% for a period or periods aggregating more than three minutes in any 60-minute period, the permittee must take corrective action and report the exceedance in its annual compliance certification and in accordance with the excess emissions rules in IDAPA 58.01.01.130-136. The permittee is also required to maintain records of the results of each visible emissions inspection and each opacity test when conducted. These records must include the date of each inspection, a description of the permittee's assessment of the conditions existing at the time visible emissions are present, any corrective action taken in response to the visible emissions, and the date corrective action was taken.

Should a specific emission unit have a specific compliance demonstration method for visible emissions that differs from Permit Condition 2.9, then the specific compliance demonstration method overrides the requirement of condition 2.9. Permit Condition 2.9 is intended for small sources that would generally not have any visible emissions.

Permit Condition 2.9 requires the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of discovering visible emissions meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

6.4 Excess Emissions – IDAPA 58.01.01.130-136

Requirement

Permit Condition 2.10 requires the permittee to comply with the requirements of IDAPA 58.01.01.130-136 for startup, shutdown, scheduled maintenance, safety measures, upset, and breakdowns. This section is fairly self-explanatory and no additional detail is necessary in this technical analysis. However, it should be noted that subsections 133.02, 133.03, 134.04, and 134.05 are not specifically included in the permit as applicable requirements. These provisions of the *Rules* only apply if the permittee anticipates requesting consideration under subsection 131.02 of the *Rules* to allow DEQ to determine if an enforcement action to impose penalties is warranted. Section 131.01 states "*. . . The owner or operator of a facility or emissions unit generating excess emissions shall comply with Sections 131, 132, 133.01, 134.01, 134.02, 134.03, 135, and 136, as applicable. If the owner or operator anticipates requesting consideration under Subsection 131.02, then the owner or operator shall also comply with the applicable provisions of Subsections 133.02, 133.03, 134.04, and 134.05.*" Failure to prepare or file procedures pursuant to Sections 133.02 and 134.04 is not a violation of the *Rules* in and of itself, as stated in subsections 133.03.a and 134.06.b. Therefore, since the permittee has the option to follow the procedures in Subsections 133.02, 133.03, 134.04, and 134.05; and is not compelled to, the subsections are not considered applicable requirements for the purpose of this permit and are not included as such.

Compliance Demonstration

The compliance demonstration is contained within the text of Permit Condition 2.10. No further clarification is necessary here.

6.5 Open Burning – IDAPA 58.01.01.600-616

All open burning shall be done in accordance with IDAPA 58.01.01.600-616.

6.6 Renovation/Demolition – 40 CFR 61, Subpart M - Asbestos

The permittee shall comply with all applicable portions of 40 CFR 61, Subpart M when conducting any renovation or demolition activities at the facility.

6.7 Test Methods – IDAPA 58.01.01.157

The test method(s) for each emissions unit limit is listed in the permit in accordance with EPA's comments as follows below. If the permit requires any testing, it shall be conducted in accordance with the procedures in IDAPA 58.01.01.157.

Test methods and averaging times: The specific reference test method and averaging times for each emissions limit must be identified in the permit. A reference test method must be identified even if no source-testing requirement is imposed by the permit.

6.8 Reports and Certifications

All periodic reports and certifications required by the permit shall be submitted within 30 days of the end of each specified reporting period to the appropriate DEQ and EPA regional office.

6.9 Monitoring and Recordkeeping

The permittee is required to maintain recorded data in an appropriate location for a period of at least five years in accordance with IDAPA 58.01.01.322.07.c. Though specific applicable requirements may have record retention times of less than five years, this requirement requires the permittee to maintain all recorded data for a minimum of five years, which will satisfy those shorter record retention times.

6.10 Fuel-Burning Equipment – IDAPA 58.01.01.675

The boilers and hot oil heaters are subject to this regulation. The CB500 boiler, when operated on recycled waste oil, is required to source test to show compliance with this standard.

6.11 Fuel-Sulfur Content – IDAPA 58.01.01.725-729

Distillate fuel oil is processed at the facility, so IDAPA 58.01.01.728 is applicable. No residual fuel oil is processed at the facility so IDAPA 58.01.01.727 is not applicable.

6.12 NSPS – 40 CFR 60

According to the permit application, three tanks, Nos. 29, 49, and 50, have capacities of 155,982 gallons (for Tank No. 29) and 100,402 gallons (for Tanks Nos. 49 and 50) and maximum vapor pressures of 1.4 psi (for 29) and 1.1 psi (for 49 and 50). Tanks 29 and 50 were installed in 1992. Tank 49 was installed in March 1994. Subpart Kb applies to tanks that store volatile organic liquids, have a capacity greater than 40 m^3 (10,567 gallons), and were installed after July 23, 1984. There is an exemption from the requirements of Kb for tanks with a storage capacity of less than 151 m^3 (39,890 gallons) and a vapor pressure of less than 3.5 kPa (0.5 psi). The capacities and the vapor pressures of the three tanks exceed the exemption criteria. Therefore, the provisions of Subpart Kb apply to these tanks.

Subpart Dc applies to the CB500 boiler. The boiler is rated at 20.5 MMBtu/hr, which is between 10 MMBtu/hr and 100 MMBtu/hr, and the PTC to allow the combustion of recycled waste oil as a fuel was issued on April 13, 2001. The regulation applies to boilers modified after June 9, 1989.

6.13 NESHAPS – 40 CFR 61 and 63

NESHAPS does not apply to this facility.

CB500 Boiler, CB400 Boiler, CEI-3000 Hot Oil Heater, And CEI-5000g Hot Oil Heater

The requirements of this section were transferred from Permit to Construct 011-00023, issued April 13, 2001. Because this is a facility-wide Tier II, the CEI-3000 hot oil heater was included as fuel burning equipment. It was not listed in the previous permits because no permit to construct was required.

6.14 Natural Gas Throughput Limits

Formaldehyde emissions from the facility are close to the IDAPA 58.01.01.586 increment for the average annual concentration (see Appendix B, Modeling Technical Memorandum). The majority of the formaldehyde emissions result from the fuel burning equipment. The emissions were estimated at

the maximum rated capacity of the equipment. However, it is possible to over-fire fuel burning equipment, which could result in an exceedance of the formaldehyde increment. Therefore, the annual natural gas usage is limited to the amounts requested in the Tier II application.

6.15 Compliance Demonstration

Monthly tracking of the amount of natural gas used is required for each of the boilers and hot oil heaters listed in the permit.

Asphalt Emulsion And Cutback Mixing And Distribution

This section includes the tanks and the loading racks. The permit conditions and limits were transferred from PTC 011-00023 issued April 8, 1993. Other permit conditions have been added in response to the facility's Tier II operating permit application. The VOC limits from the April 8, 1993 PTC 011-00023 have been removed and replaced with throughput and benzene limits, which inherently limit the VOC from all tanks and loading racks. New VOC limits were not imposed because the potential to emit VOC based on the throughput limits are much less than the major source threshold.

6.16 Benzene Emissions Limits

The benzene emissions from the facility are close to the IDAPA 58.01.01.586 increment for the average annual concentration (see Appendix B, Modeling Technical Memorandum). Most of the sources of benzene emissions are from materials that have a fairly consistent mass fraction of benzene. There are a few tanks and loading racks which contain formulations that have variable amounts of benzene-containing materials. Because of the potential variability of benzene concentrations, the benzene emissions from these sources could exceed the amounts predicted in the permit application. Therefore, tracking the amounts of the benzene-containing materials for Tank Nos. 22, 23, 49, and 50 and Loading Rack Nos. 3, 5, 6, and 8 is required.

6.17 Compliance Demonstration

The throughput of benzene-containing materials for those tanks and loading racks are required to be tracked monthly, and the benzene throughputs are required to be calculated monthly and for the most recent 12-month period. The benzene throughput is representative of the benzene emissions because the TANKS input parameters, other than the benzene throughput, are estimated at worst case and are therefore not required to be tracked. TANKS is the program used to calculate benzene emissions using the benzene throughput. The TANKS benzene emission output values will not exceed the permitted benzene emissions limits as long as the benzene throughput limits are not exceeded.

NSPS Requirements

6.18 40 CFR 60 Kb

Tanks 29, 49, and 50 appear to be subject to NSPS requirements. The facility is required to comply with the provision of 40 CFR Part 60 Subpart Kb.

6.19 Compliance Demonstration

The facility is required to identify all tanks subject to 40 CFR Part 60 Subpart Kb and demonstrate compliance, for each tank identified, with the requirements of 40 CFR Part 60 Subpart Kb, within 14 days of the issuance of this permit.

Emissions Limits Summary

Table 6.1 SUMMARY OF EMISSIONS LIMITS

Idaho Asphalt Supply, Inc., Blackfoot Emission Limits[a] – Hourly (lb/hr), and Annual[b] (T/yr) or (lb/yr)									
Source Description	PM/PM_{10}[c]		SO_2		As		Cd		Benzene
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/yr
CB500 Boiler	1.75/1.75	---	12	10	0.00101	1.95	0.000405	0.92	---
Tank ID: 22, 23									0.93
Tank ID: 49, 50									27.85
Loading Rack #3									3.5
Loading Rack #5 and #6									1.8
Loading Rack #8									2.3

[a] As determined by a pollutant-specific EPA reference method, a DEQ-approved alternative, or as determined by DEQ's emissions estimation methods used in this permit analysis.

[b] As determined by multiplying the actual or allowable (if actual is not available) pound per hour emission rate by the allowable hours per year that the process(es) may operate(s), or by actual annual production rates.

[c] Includes condensibles.

7. PUBLIC COMMENT

An opportunity for public comment on the air quality aspects of the proposed permit was provided in accordance with IDAPA 58.01.01.404.01.c from November 5, 2003 through December 8, 2003. The Response to Comments are included as Appendix E.

8. RECOMMENDATION

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ issue PTC/Tier II Operating Permit T2-030300 to Idaho Asphalt Supply, Inc.

CZ/sd T2-030300

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APPENDIX A

Emission Inventory
Technical Memorandum
October 17, 2003

Engineering Memorandum

FINAL

October 17, 2003

Idaho Asphalt Supply, Blackfoot

T2-030300

Prepared by:

Darrin Mehr, Associate Air Quality Engineer
Division of Technical Services

Table Of Contents

Acronyms, Units, and Chemical Nomenclatures

AACC	Acceptable ambient concentration for carcinogens
acfm	actual cubic feet per minute
Btu	British thermal unit
CAS	Chemical Abstract Service
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
gal/hr	gallons per hour
gal/yr	gallons per year
gal/min	gallons per minute
gr	grain (1 lb = 7,000 grains)
gr/dscf	grains per dry standard cubic foot
HAPs	Hazardous Air Pollutants
Hr	hour(s)
hr/yr	hours per year
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
lb/MM cu ft	pounds per million cubic feet of natural gas
lb/yr	pounds per year
MMBtu/hr	Million British thermal units per hour
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O_2	oxygen
PM	Particulate Matter
PM_{10}	Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PTE	Potential to Emit
SARA	Superfund Amendments and Reauthorization Act of 1986, Section 312, Public Law 99-499, codified at 42 U.S.C. Section 11022
scf	standard cubic feet
SO_2	sulfur dioxide
TAPs	toxic air pollutants
T/yr	Tons per year

PURPOSE

The purpose for this memorandum is to verify the validity of the emissions estimates from the Idaho Asphalt Supply (IAS) facility in Blackfoot, Idaho. This memorandum also provides discussion of parameters related to operations of emissions sources for consideration by The Department of Environmental Quality's (DEQ) Stationary Source Program Office (SSPO) in permit drafting.

PROJECT DESCRIPTION

This emissions inventory review was conducted following the request of DEQ's SSPO. IAS has requested a facility-wide PTC/Tier II operating permit to consolidate PTC-exempted emissions units and also requests that the permit and analysis contain increased tank dimensions and product throughput limitations to create a permit that does not contain information which IAS regards as confidential business information (CBI). The emission estimates are intended to be conservative, which means the maximum amount of emissions the facility could emit or is willing to be limited to in the permit are represented in the permit application. Emission estimates were based on maximum requested product throughput and worst-case tank configurations.

The facility-wide permit includes fuel combustion equipment consisting of two boilers and two hot oil heaters. A PTC was issued on April 13, 2001, for the two boilers and one hot oil heater. An additional hot oil heater that was installed in 1993 was included in this project.

Project documentation was submitted by IAS, or by Millenium Science & Engineering, Inc., on behalf of IAS.

The permitting analysis for PTC 011-00023, issued April 13, 2001, was relied upon for comparison with the fuel combustion equipment emissions estimates submitted by IAS in the application materials.

TECHNICAL ANALYSIS

Process Description

The IAS facility stores, processes, and distributes asphalt binders. Asphalt binders is a broad category of materials that is used in the manufacture and application of asphalt pavement. IAS has identified the following materials that are stored and distributed at its Blackfoot facility:

- Asphaltic cements;
- Polymer-modified asphalt cements;
- Asphalt cutbacks; and,
- Asphalt emulsions.

The primary ingredient in the asphalt binders is asphalt cement, which is received by the facility via delivery roadway tankers or by railcar from refineries in the region. The asphalt cement is in semi-solid form when it arrives at the IAS facility. Steam from either of two process steam boilers heats the asphalt cement to 300°F to liquify the contents to allow the material to be transferred from the delivery tank to the facility's storage tanks. The tanks dedicated to storage of raw asphalt cement are heated during summer months when customer demand for asphalt binder material is the greatest. Asphalt cement storage tanks are unheated during the winter months due to lack of customer demand.

Asphalt cement and various other raw materials are stored in above-ground tanks for temporary storage before they are combined according to specific recipes, or formulations, to create asphalt binders meeting specified material properties. Some of the tanks at the facility are process tanks in addition to single component storage tanks. One or more ingredient(s) is/are added to the asphalt cement base material, according to the IAS formulation that has been selected to meet the customer's application requirements.

Asphalt binder materials are stored temporarily and then transferred from IAS facility storage through a loading rack to the customer's tanker truck, and the material is transported off-site. The alternative to product mixing in storage tanks is to transfer the individual product to the customer's tanker carrier through a loading rack using an in-line mixing process. In-line mixing is the process that IAS has agreed to use for all loading of cutback asphalt distributed by this facility.

Asphalt cement is a residue product from the distillation process of crude oil. Storage and material transfer of this material creates emissions of VOCs and TAPs. Asphalt cement is the base material for the products distributed by IAS, and the tanks that store this material are heated with steam from the boilers.

Polymer-modified asphalt (PMA) cement is a mixture of asphalt cement, polymer, and lube oil. Storage tanks dedicated to storing PMA are heated by the hot oil heaters during warmer months for product distribution. These tanks are not typically heated during the winter months.

Asphalt cutback is made from either asphalt cement and fuel oil, or asphalt cement and catalytic cracked oil. This material is transferred by overhead splash loading racks.

Emissions estimates are worst-case, with worst-case operating schedule, product formulation, tank sizes, and operating conditions, according to the application. Where more than one tank stores a given chemical or product, the maximum requested throughput was evenly divided between those tanks dedicated to storing that chemical or to the individual tank.

Equipment Listing

Equipment located at the IAS facility can be grouped into several categories:

- 61 material storage tanks (of which 51 are organic liquid storage tanks). All tanks are fixed-roof storage tanks.
- 6 loading racks with 7 loading points
- East and West biofilter systems; and,
- Fuel combustion equipment:
  CB500 dual fuel-fired boiler
  CB400 natural gas-fired backup boiler
  CEI-5000G primary hot oil heater
  CEI-3000 secondary hot oil heater

Table 1 contains information on the fuel combustion equipment at the facility.

Table 1. FUEL BURNING EQUIPMENT

Emissions Unit/Model Number	Manufacturer	Rated Heat Input Capacity (MMBtu/hr)	Hourly Fuel Consumption Rate (gal/hr[1] for oil) or (cu ft/hr[2] for natural gas)	Fuel Type
CB500 Primary Boiler	Cleaver Brooks	20.5	137 gal/hr oil; 20,098 cf/hr natural gas	On-specification recycled used oil or natural gas
CB400 Secondary Boiler	Cleaver Brooks	16.8	16,471	Natural gas
CEI-5000G	CEI Enterprises, Inc.	7.3	7,157	Natural gas
CEI-3000	CEI Enterprises, Inc.	4.23	4,147	Natural gas

[1] gallons per hour
[2] cubic feet per hour

Tables 2, 3 and 4 contain information about the storage tanks located at the facility. The information requested by the permittee (IAS) to be represented in the permit is contained in these tables. Storage tanks are segregated according to whether each tank is connected to either the East Biofilter or the West Biofilter.

Table 2. STORAGE TANKS ROUTED TO EAST BIOFILTER

Storage Tank ID	Material Contents	Requested Tank Diameter (feet)	Requested Tank Height (feet)	Requested Storage Capacity (gallons)	Requested Annual Throughput (gal/yr)
35	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
36	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
37	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
38	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
68	Cracked Heavy Oil Alkyl Amines	14.94	17.93	23,518	19,755

Table 3. STORAGE TANKS ROUTED TO WEST BIOFILTER

Storage Tank ID	Material Contents	Requested Tank Diameter (feet)	Requested Tank Height (feet)	Requested Storage Capacity (gallons)	Requested Annual Throughput (gal/yr)
4	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
5	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
6	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
7	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
8	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
9	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
10	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
13	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
14	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
15	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
16	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
17	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
18	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
74	Asphalt Cements	109.46	43.79	3,082,557	2,276,938
75	Asphalt Cements	109.46	43.79	3,082,557	2,276,938

Table 4. UNCONTROLLED STORAGE TANKS

Storage Tank ID	Material Contents	Requested Tank Diameter (ft)	Requested Tank Height (ft)	Requested Storage Capacity (gallons)	Requested Annual Throughput (gal/yr)
44	Water-based asphalt emulsions	18.80	48.34	100,402	2,631,374
45	Water-based asphalt emulsions	18.80	48.34	100,402	2,631,374
46	Water-based asphalt emulsions	18.80	48.34	100,402	2,631,374
47	Water-based asphalt emulsions	18.80	48.34	100,402	2,631,374
48	Water-based asphalt emulsions	18.80	48.34	100,402	2,631,374
51	Water-based asphalt emulsions	18.80	48.34	100,402	2,631,374
52	Water-based asphalt emulsions	18.80	48.34	100,402	2,631,374
53	Water-based asphalt emulsions	18.80	48.34	100,402	2,631,374
54	Water-based asphalt emulsions	18.80	48.34	100,402	2,631,374
55	Water-based asphalt emulsions	18.80	48.34	100,402	2,631,374
49	Fuel-based asphalt emulsions	18.80	48.34	100,402	1,259,177
50	Fuel-based asphalt emulsions	18.80	48.34	100,402	1,259,177
22	Customer product return asphalt cutbacks – distillate fuel oil or cracked catalytic oil	20.88	23.86	61,140	244,558
23	Customer product return asphalt cutbacks – distillate fuel oil or cracked catalytic oil	20.88	23.86	61,140	244,558
A	Fatty Acid Derived Amines	25.2	37.81	141,114	64,835
B	Ligninamine	23.2	34.80	110,043	51,296
G	Amines	24.16	36.24	124,301	62,150
K	Adiponitrile	24.16	36.24	124,301	62,150
2	Used Oil	21.03	54.07	140,449	260,000
3	Lube Oil	20.89	55.71	142,857	142,857
12	Cracked Heavy Oil Amines	14.94	17.93	23,518	19,755
19	Cracked Heavy Oil Amines	14.94	17.93	23,518	19,755
20	Cracked Heavy Oil Amines	14.94	17.93	23,518	19,755
24	SC Cutter	16.49	43.97	70,225	237,572
25	#1 Diesel Fuel	19.24	33.67	73,206	933,420
26	SC Cutter	16.49	43.97	70,225	237,572
27	#1 Diesel Fuel	19.24	33.67	73,206	933,420
28	#2 Diesel Fuel	20.77	55.39	140,449	1,809
29	Naphtha	24.75	43.32	155,982	219,797
69	Cracked Heavy Oil Amines	14.94	17.93	23,518	19,755

Table 5 contains information describing the facility's loading racks. Throughput information for the loading racks is contained in Table 8 of this memorandum.

Table 5. LOADING RACK INFORMATION

Loading Rack ID	Material Loaded (gal/yr)	Loading Rack Design
1	Asphalt Cement	Overhead Splash Fill
2	Polymer-modified asphalt	Overhead Splash Fill
3	Cutback Asphalt	Overhead Splash Fill
4	Polymer-modified asphalt	Overhead Splash Fill
5	Asphalt Emulsions-Water-based and Fuel-based	Overhead Submerged Fill (or Bottom Loading as an alternative)
6	Asphalt Emulsions-Water-based and Fuel-based	Overhead Submerged Fill (or Bottom Loading as an alternative)
8	Cutback Asphalt	Overhead Splash Fill

Emission Estimates

IAS submitted a facility-wide emissions inventory of criteria air pollutants (PM_{10}, NO_x, SO_2, VOCs, CO) and TAPs that are emitted from the storage tanks, loading racks, fuel combustion equipment, and odor control equipment. IAS states that the worst case product formulations that the facility wants to distribute are presented in the application, so worst-case emissions estimates are represented as well. IAS's September 29, 2003 submittal contains alterations to the original requested throughput of materials and worst-case product formulations for this project. That submittal only affected fuel-based cutback asphalt throughput and product formulation from loading racks #3 and #8, and storage tanks 22 and 23.

Storage Tanks

IAS estimated emissions of VOCs and TAPs using U.S. EPA emission estimation software, referred to as TANKS 4.0[1]. TANKS 4.0 is based on the US EPA 's Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: *Stationary Point and Area Sources* - Chapter 7 – Organic Liquids Storage Tanks, September 1997. Local climatic data for Pocatello, Idaho, and an average storage temperature for heated tanks were used in the emission estimates. Not all tanks at the facility are heated, and the emissions from unheated tanks were estimated at ambient temperature. Tank physical parameters and process material specifications, including stored product chemical composition data were not re-entered into the TANKS 4.09 emission estimation software by DEQ. IAS should be limited to the materials represented within the documents submitted to DEQ for this permit analysis.

Where storage tank emissions from the storage of asphalt cement were calculated, IAS's inventory was generated using the TANKS 4.0 program to quantify the annual VOCs emission rate. The annual emissions rate of VOCs for each tank was then multiplied by the individual TAP content obtained from the chemical speciation profile listed in Table 11.1-16 Speciation Profiles for Load-out, Silo Filling, and Asphalt Storage Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: *Stationary Point and Area Sources,* Chapter 11.1—Hot Mix Asphalt Plants. The result of this calculation is an annual emissions inventory TAPs due to tank filling, emptying, and storage of the materials at the climatic and storage temperature conditions specified by IAS. This is a reasonable approach to estimating TAPs emissions from asphalt cement.

Asphalt cement is the base material for the various forms of asphalt binder that IAS distributes as product. Asphalt cement is mixed with other materials in some storage tanks according to a specific formula that yields the desired physical properties. So where other materials, such as kerosene or No. 2 distillate fuel oil, are combined with asphalt cement within a storage tank to make an asphalt binder, the chemical speciation and the appropriate physical data for each compound was also input into the TANKS 4.0 software to estimate VOCs and TAPs.

Several key assumptions that IAS has used in developing the facility-wide emissions inventory are described in summary below:

Tank Capacity and Physical Dimensions

IAS submitted a detailed summary of the analysis performed to develop the most conservative (or highest) emissions estimates from the storage tanks. IAS requests that the actual design storage capacity not be listed in the permit or permit analysis.

IAS developed a worst-case emission rates and larger-than-actual tank capacities to mask the actual tank capacities. Tank capacity values were based on the maximum daily storage capacity of materials that corresponded to the upper limit of the reporting threshold for SARA Tier II reporting requirements. For some additive tanks the level used was one level higher. Each tank's diameter-to-height ratio was increased to the point where the emission rate from each storage tank is greater than if the actual tank dimensions at the same material throughput and physical properties were used in the TANKS 4.09 software. The tank diameter and height determine a tank's storage capacity in fixed roof tanks. The end result of this approach is that each storage tank at the facility included in the inventory was presented with tank dimensions that are greater than actually exist and worst-case emissions estimates were included in the application.

Tank Throughputs

IAS requested a throughput equal to the entire amount of asphalt binder bids submitted during the 2000 calendar year within the facility's area. The facility-wide material throughput for each category of product distributed by this facility was then divided by the number of storage tanks used to store that category of product. The result was the requested permit allowable throughput for each tank.

Loading Rack Throughput

Loading rack throughputs were specified by IAS. The type of material that each loading rack transfers from facility storage tankage to customer carrier tanks was also specified in the application. IAS transfers asphalt cement as a product and the other mixtures consisting of slow- and medium-cure cutback asphalt, water-based asphalt emulsions, and fuel-based emulsions from storage tanks to customers' carrier tanks.

Unloading Stations

Unloading stations are used to receive product from off-site to facility storage tanks. These are not the same process as the loading racks. The emissions from unloading stations are considered to be included in the storage tank emissions estimates. This is valid, because TANKS 4.09 calculates working losses, which are emissions created by the displacement of vapors within the storage tanks by the liquid being received. Emissions are exhausted through a vent on each of the fixed roof storage tanks. These emissions have not been separated from the breathing losses from the tanks that are caused, in part, by diurnal temperature changes, solar insolation, and the stored material's physical properties. The storage tank vent or the associated biofilter are the only points where tank loading emissions are assumed to be vented to the atmosphere. The unloading stations are not considered as individual emissions sources for this project.

Material Composition

The term *material composition* refers to the chemical speciation, or formulation, of the products stored and distributed at the facility. Worst-case formulations cause worst-case air pollutant emissions at a reference set of physical conditions, such as temperature and atmospheric pressure. The numerical values that IAS lists in the Product Chemical Speciation table, on page B3-1 (revised 9-29-03), represent the liquid mass fraction values used to create custom liquid storage profiles for the TANKS 4.0 program[1] on a fraction of the total mass basis. Please see Attachment A to review the chemical speciation provided by IAS.

[1] United States Environmental Protection Agency, Emission Factor and Inventory Group; Emissions, Monitoring, and Analysis Division; Office of Air Quality Planning and Standards, TANKS 4.09 software program based on *Compilation of Air Pollutant Emission Factors (AP-42)*, September 2001. This program may be obtained from the following website address: http://www.epa.gov/ttn/chief/software/tanks/index.html

Cutback Asphalt

IAS submitted revised composition data in their September 29, 2003 supplement. This submittal contained a revised worst case allowable composition of the cutback asphalt. Cutback asphalt can be made using either catalytic cracked oil or a combination of No. 2 distillate fuel oil and kerosene, which are combined with asphalt cement. IAS refers to the combination of No. 2 distillate fuel oil and kerosene as "No. 1 fuel" in the Product Chemical Speciation table on Page B3-1 (revised 9-29-03).

There are many formulations of cutback asphalt produced at the facility. This is evident from the listing of individual mixtures identified on the material safety data sheets (MSDS) in Appendix B3 of the original January 13, 2003, PTC/Tier II operating permit application. The latest submittal from IAS[2] requests that the worst-case fuel-based cutback asphalt be limited to 24 percent fuel. DEQ's interpretation of this requested fuel limit is that the limit applies to the combination of kerosene and No. 2 distillate fuel oil. Kerosene has a higher content of benzene than distillate fuel oil #2. Therefore, kerosene content in fuel-based cutback asphalt should be limited to 19.2% of the mixture, which leaves 4.8 percent of the fuel component for distillate fuel oil #2, as specifically listed in the Product Chemical Speciation table on page B3-1 (revised 9-29-03). This is an annual average limitation, not a batch, daily, or monthly enforceable limitation, so there is a degree of flexibility that IAS may be provided in formulations.

The chemical speciation profile of the raw products used to manufacture the distributed products is included in Attachment A of this memorandum. The information for the manufactured products was submitted by the applicant as the worst-case formulations.

The information in Table 6 was taken from Table 11.1-16 – Speciation Profiles for Load-Out, Silo Filling, and Asphalt Storage Emissions—Organic Volatile-based Compounds, Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: *Stationary Point and Area Sources*, December 2000. There are no particulate matter-based emissions listed in the application for the material transfer of the asphalt binder material. Note that IAS has used more conservative values for the xylene compounds than provided by AP-42. Total xylenes, consisting of m-, o-, and p- isomers in aggregate amount to 0.49% in IAS's emissions estimates.

Table 6. INDIVIDUAL TAP/HAP SPECIATION OF VOCS FROM ASPHALT CEMENT PER AP-42, SECTION 11.1

Chemical Component	Speciation content (%)
Benzene	0.032
Ethylbenzene	0.038
Formaldehyde	0.69
n-Hexane	0.10
Toluene	0.062
m-/p-Xylene	0.2
o-Xylene	0.057

Storage Tank Emissions Estimates

DEQ's verification analysis of the storage tanks emissions resulted in some slightly different results than IAS submitted. However, IAS's values are higher for all pollutants, except for iso-octane and methylene chloride. However, the difference for iso-octane and methylene chloride emissions was small, and the amount of emissions of these two pollutants did not trigger extensive regulatory review. For the rest of the pollutants emitted by the storage tanks, the values submitted by IAS are more conservative. Therefore, the values

[2] Letter from Millenium Science and Engineering, Inc., submitted on behalf of Idaho Asphalt Supply, Inc., dated September 29, 2003, from Mr. Troy Riecke, Environmental Engineer, to Ms. Carole Zundel, DEQ, containing revisions to product throughput, product formulation, emissions estimates, and ambient impact modeling results for TAPs.

submitted by IAS in the September 29, 2003, tanks emission inventory should be used for the permitting analysis. A summary of combined storage tank emissions estimates by DEQ and IAS is listed below in Table 7. IAS's storage and process tank emissions estimates can be found in Attachment B of this memorandum. DEQ's estimates can be reviewed in Attachment C of this memorandum.

Table 7. STORAGE TANK EMISSIONS COMPARISON BY POLLUTANT

Pollutant	DEQ's Estimated Emissions (lb/yr)	IAS's Estimated Emissions (lb/yr)
Volatile Organic Compounds	18,129.6	18,141
Acetone	5.8	5.79
Benzene	64.5	65
Methy Ethyl Ketone	4.1	4.10
Carbon Disulfide	1.7	1.68
Cyclo-hexane	653.8	654
Diethylene Triamine	1.4	1.40
Ethylbenzene	[redacted]	[redacted]
Formaldehyde	72.48	72.59
Hexane (-n)	1302.4	1,357
Iso-octane	0.1	0.03
Methylene Chloride	0.1	0.03
Styrene	0.6	0.57
Toluene	[redacted]	[redacted]
Trimethylbenzene	[redacted]	[redacted]
Xylenes	[redacted]	[redacted]

East and West Biofilter Systems

The East and West Biofilters are operated independently or concurrently. Each of the biofilters is dedicated to controlling odorous emissions from material storage tanks. Generally speaking, storage tanks located on the east side of the facility have emissions which may be vented directly to the atmosphere or to the East biofilter. Emissions from tanks located on the west side of the facility are generally routed to the West biofilter, or are emitted directly to the atmosphere. The biofilters only provide odor control. There is no emissions reduction credited for VOCs or any TAPs. IAS's September 29, 2003 submittal stated that storage tanks numbered 4 through 10 will be routed to the West Biofilter.

The biofilters are a concern for the emissions inventory only because they are point sources for the collected pollutant emissions, which may have consequences for worst case ambient impact assessments. A number of the storage tanks are uncontrolled and have emissions that vent directly to the atmosphere from the vent located on the tank. If a biofilter is not operational the storage tanks routed to it vent directly to the atmosphere.

Physical parameters and requested throughput for this facility's storage tanks are listed in Tables 2 through 4. The tanks are grouped by the biofilter that controls odorous emissions. Uncontrolled tanks are not connected to either biofilter system, and are listed in Table 4. Table 8 contains physical parameters for the biofilters that were used in the modeling demonstration.

Table 8. STACK PARAMETERS FOR EAST AND WEST BIOFILTERS

Emission Unit	Stack Height (ft)	Stack Diameter (ft)	Gas Velocity (fps)	Stack Temp. (°K)
East Biofilter	16	0.333	Not listed in application materials	Not listed in application materials
West Biofilter	16	0.333	Not listed in application materials	Not listed in application materials

Loading Racks

There are six different loading "racks" located at this facility that are considered significant sources. Loading racks 5 and 6 are located together, and are counted as one "rack." Product throughput is applied to both racks labeled #5 and #6. None of the loading racks is equipped with add-on emissions control equipment.

All loading racks are considered to be fugitive emissions sources. Modeling parameters are an assumed stack diameter of 0.01 feet and an exhaust flow rate of 0.001acfm. IAS estimated VOCs and TAPs emissions using EPA AP-42, Section 5.2 Transportation and Marketing of Petroleum Liquids, January 1995. IAS's emissions estimates were performed using the products' true vapor pressure, molecular weight of the vapor, average annual liquid temperature, and the annual requested throughput of each material. The emission rates were assumed to be constant over 8,760 hours per year to derive an average hourly emission rate for VOCs and any TAPs.

Table 9 contains the type of material and the requested permit-allowable throughput of that material for each loading rack.

Table 9. LOADING RACK REQUESTED ANNUAL THROUGHPUTS

Loading Rack ID	Material Loaded (gal/yr)	Long Term Requested Capacity (gal/yr)
1	Asphalt Cement	22,187,146
2	Polymer-modified asphalt	6,322,405
3	Cutback Asphalt	3,668,000
4	Polymer-modified asphalt	14,752,278
5[1]	Asphalt Emulsions- Water-based and Fuel-based Throughput split is not specified between the two racks-it is applied to both racks 5 and 6	26,313,742 gal/yr water-based emulsions 2,266,517 gal/yr fuel-based emulsions
6[1]		
8	Cutback Asphalt	2,446,000

[1] Loading racks 5 and 6 are located together so there are two material transfer systems at this combined "rack"

Table 10 contains data for the modeling of emissions from the loading racks, which are considered significant sources of air pollutants.

Table 10. STACK PARAMETERS FOR LOADING RACKS 1-6, AND 8

Emission Unit	Material Loaded	Stack Height (ft)	Stack Diameter (ft)	Stack Flow Rate (acfm)	Gas Velocity (fps)	Stack Temp. (°F)
Loading Rack 1	Asphalt Cements	10	0.01[1]	0.001[1]	0.21	330
Loading Rack 2	Polymer-modified Asphalts	10	0.01[1]	0.001[1]	0.21	330
Loading Rack 3	Cutback Asphalts	10	0.01[1]	0.001[1]	0.21	280
Loading Rack 4	Polymer-modified Asphalts	10	0.01[1]	0.001[1]	0.21	330
Loading Rack 5	Fuel-and water-based Emulsions	10	0.01[1]	0.001[1]	0.21	200
Loading Rack 6	Fuel and Water-based emulsions	10	0.01[1]	0.001[1]	0.21	200
Loading Rack 8	Cutback asphalts	10	0.01[1]	0.001[1]	0.21	280

[1] IAS assumed these parameters to account for fugitive nature of exhaust release

Fuel Combustion Equipment

DEQ issued PTC 001-00023 to IAS on April 13, 2001, for the CB500 and CB400 boilers, and primary hot oil heater CEI-5000G. This project's emissions inventory incorporates the emissions estimates for that permitting action. IAS has not requested any modifications to that permit. However, the benzene emission factor for natural gas combustion was revised by IAS. IAS's emission inventory used the same emission factor for benzene emissions from recycled waste oil combustion in the CB500 boiler as used by DEQ in the April 2001 PTC analysis. The emission factor in the original permit analysis was 2.14E-4 lb/MM cu ft of natural gas combusted. The emission factor used by IAS was 2.1E-3 lb benzene/MM cu ft natural gas combusted, and was obtained from AP-42 Table 1.4-3, for natural gas combustion in small boilers. The emission factor used by IAS is considered to be accurate, and was used in this project's analysis.

Hydrogen chloride emissions were estimated to be 6.04 lb/hr from recycled waste oil combustion in Primary Boiler CB500. Hydrogen chloride is a non-carcinogenic TAP. These emissions were not modeled in the original April 2001 permitting analysis, but DEQ emission inventory review staff have recommended these emissions be included in the most recent DEQ verification modeling analysis. Potential emissions of gaseous hydrogen chloride for Boiler CB500 are listed in Table 12.

A secondary hot oil heater designated as CEI-3000 was included in IAS's emissions inventory for the facility-wide PTC/Tier II permit. The secondary oil heater is rated at 4.23 MMBtu/hr heat input and is operated exclusively on natural gas. The emissions estimates that were submitted by IAS were checked by DEQ, and the emissions estimates submitted by IAS for this emissions unit are contained in Attachment E of this memorandum. Refer to Attachment F of this memorandum to review the calculations used to establish recommended annual and hourly emissions limits for Boiler CB500.

Tables 11, 12, 13, 14, 15, and 16 contain the estimated emissions data for the regulated air pollutants contained in this memorandum.

Table 11. POTENTIAL CRITERIA AIR POLLUTANT EMISSIONS FROM BOILER CB500

Averaging Period	PM[1]	PM_{10}[2]	NO_x[3]	CO[4]	SO_2[5]	VOCs[6]	Lead
(lb/hr)[7]	1.57	1.39	2.60	1.69[9]	10.0	0.137	.0.083
(T/yr)[8, 10]	2.33	2.00	11.27	8.04[9]	9.60	0.61	0.079

1 particulate matter (total particulate matter)
2 particulate matter with a mean aerodynamic diameter of 10 microns or less
3 nitrogen oxides
4 carbon monoxide
5 sulfur dioxide
6 volatile organic compounds
7 pounds per hour
8 tons per year
9 worst-case for CO emissions are from natural gas combustion, which is the only pollutant which is worst-case for natural gas usage
10 annual emissions are based on 1,902 hours per year operation on recycled waste oil and 8,760 hours per year on natural gas

Table 12 contains the potential TAPs and aggregated HAPs emissions from the primary boiler, which is designated Boiler CB500. Emissions estimates were based on a scenario where the annual potential emissions for a pollutant must take into account 1,902 hr/yr operation on recycled waste oil, and 6,858 hr/yr operation on natural gas, where the worst-case emissions were caused by combusting recycled waste oil. Where emissions from natural gas combustion are greater than for combusting recycled waste oil, 8,760 hr/yr of natural gas was used to estimate worst-case emissions. This convention was not followed in the original PTC issued for the fuel combustion equipment on April 13, 2001. The results of this permitting analysis may require altering the allowable emissions limits due to the assumptions used in this project's analysis.

Table 12. POTENTIAL TOXIC AIR POLLUTANT EMISSIONS FROM BOILER CB500

Averaging Period	Cd[1]	As[2]	Benzene	HCOH[3]	Hydrogen Chloride	Aggregated HAPs[4]
(lb/hr)[5]	4.49E-04	1.12E-03	4.22E-05	4.14E-03	6.04	NA
(lb/yr)[6]	0.92	1.95	0.37	18.23	11,490	280
(T/yr)[7]	NA[8]	NA	NA	NA	5.74	0.14

1 cadmium
2 arsenic
3 formaldehyde
4 hazardous air pollutants
5 pounds per hour
6 pounds per year
7 tons per year
8 not applicable

Potential emissions of aggregated HAPs from Secondary Boiler CB400 are approximately 0.14 T/yr

Table 13. POTENTIAL EMISSIONS FROM BOILER CB400

Averaging Period	PM[1]	PM_{10}[2]	NO_x[3]	CO[4]	SO_2[5]	VOCs[6]	Lead	Benzene	HCOH[7]
(lb/hr)[8]	0.13	0.13	1.65	1.38	0.01	0.09	8.24E-06	3.46E-05[12]	1.24E-03
(T/yr)[9]	0.55	0.55	7.21	6.06	0.04	0.40	3.61E-05	NA[13]	NA
(lb/yr)[10, 11]	NA	NA	NA	NA	NA	NA	NA	0.30[12]	10.82

1 particulate matter (total particulate matter)
2 particulate matter with a mean aerodynamic diameter of 10 microns or less
3 nitrogen oxides
4 carbon monoxide
5 sulfur dioxide
6 volatile organic compounds
7 formaldehyde
8 pounds per hour
9 tons per year
10 pounds per year
11 based on 8,760 hours per year operation at rated capacity and on natural gas
12 benzene emissions are based on AP-42 Table 1.4-3, July 1998, factor of 2.1E-03 pounds benzene per million standard cubic feet of natural gas
13 not applicable

Potential emissions of aggregated HAPs from Primary Hot Oil Heater CEI-5000G are approximately 0.059 T/yr.

Table 14. POTENTIAL EMISSIONS FROM PRIMARY HOT OIL HEATER CEI-5000G

Averaging Period	PM[1]	PM_{10}[2]	NO_x[3]	CO[4]	SO_2[5]	VOCs[6]	Lead	Benzene	HCOH[7]
(lb/hr)[8]	0.05	0.05	0.72	0.60	4.29E-03	0.04	3.58E-06	1.50E-05[12]	5.37E-04
(T/yr)[9, 11]	0.24	0.24	3.13	2.63	0.02	0.17	1.57E-05	NA[13]	NA
(lb/yr)[10, 11]	NA	NA	NA	NA	NA	NA	NA	0.13[12]	4.70

1 particulate matter (total particulate matter)
2 particulate matter with a mean aerodynamic diameter of 10 microns or less
3 nitrogen oxides
4 carbon monoxide
5 sulfur dioxide
6 volatile organic compounds
7 formaldehyde
8 pounds per hour
9 tons per year
10 pounds per year
11 based on 8,760 hours per year operation at rated capacity and on natural gas
12 benzene emissions are based on AP-42 Table 1.4-3, July 1998, factor of 2.1E-03 pounds benzene per million standard cubic feet of natural gas
13 not applicable

Potential emissions of aggregated HAPs from Secondary Hot Oil Heater CEI-3000 are approximately 0.034 T/yr.

Table 15. POTENTIAL EMISSIONS FROM SECONDARY HOT OIL HEATER CEI-3000

Averaging Period	PM[1]	PM_{10}[2]	NO_x[3]	CO[4]	SO_2[5]	VOCs[6]	Lead	Benzene	HCOH[7]
(lb/hr)[8]	0.03	0.03	0.42	0.35	2.49E-03	0.02	2.07E-06	8.71E-06[12]	3.11E-04
(T/yr)[9, 11]	0.14	0.14	1.82	1.53	0.01	0.10	9.08E-06	NA	NA
(lb/yr)[10, 11]	NA	NA	NA	NA	NA	NA	NA	0.08[12]	2.72

1 particulate matter (total particulate matter)
2 particulate matter with a mean aerodynamic diameter of 10 microns or less
3 nitrogen oxides
4 carbon monoxide
5 sulfur dioxide
6 volatile organic compounds
7 formaldehyde
8 pounds per hour
9 tons per year
10 pounds per year
11 based on 8,760 hours per year operation at rated capacity and on natural gas
12 benzene emissions are based on AP-42 Table 1.4-3, July 1998, factor of 2.1E-03 pounds benzene per million standard cubic feet of natural gas
13 not applicable

Table 16. SUMMARY OF POTENTIAL EMISSIONS FROM FUEL COMBUSTION EQUIPMENT

Averaging Period	PM[1]	PM_{10}[2]	NO_x[3]	CO[4]	SO_2[5]	VOCs[6]	Lead	Benzene	HCOH[7]
(lb/hr)[8]	1.78	1.60	5.39	4.02	10.02	0.29	0.083	1.00E-4	0.0062
(T/yr)[9, 11]	3.26	2.93	23.43	18.26	9.67	1.28	0.079	NA	NA
(lb/yr)[10, 11]	NA	NA	NA	NA	NA	NA	NA	0.88	39.34

1 particulate matter (total particulate matter)
2 particulate matter with a mean aerodynamic diameter of 10 microns or less
3 nitrogen oxides
4 carbon monoxide
5 sulfur dioxide
6 volatile organic compounds
7 formaldehyde
8 pounds per hour
9 tons per year
10 pounds per year for benzene and formaldehyde only

Stack parameter information is listed in Table 17 for the fuel combustion equipment.

Table 17. FUEL BURNING EQUIPMENT STACK PARAMETERS

Emission Unit	Stack Height (ft)	Stack Diameter (ft)	Gas Velocity (fps)	Stack Temp. (°K)
CB500 Boiler	52.1	1.97	44.8	533
CB400 Boiler	26.7	1.96	37.8	533
CEI-5000G Hot Oil Heater	10.1	1.33	39.1	589
CEI-3000 Hot Oil Heater	14.7	1.00	37.2	544

Table 18 lists the estimated grainloadings for each of the fuel combustion sources at the facility. The emissions estimates were taken from IAS's application, and are consistent with the values used in the technical analysis for the issuance of PTC 011-00023, April 13, 2001.

Table 18. GRAIN LOADINGS FOR FUEL COMBUSTION EQUIPMENT

Emissions Unit	Fuel Type	Estimated Exhibited Grain Loading (gr/dscf[1], corrected to 3% O_2[2])	Grain Loading Standard (gr/dscf, corrected to 3% O_2)
Boiler CB500	Recycled Waste Oil	0.047	0.050
Boiler CB500	Natural Gas	0.004	0.015
Boiler CB400	Natural Gas	0.004	0.015
Hot Oil Heater CEI-5000G	Natural Gas	0.004	0.015
Hot Oil Heater CEI-3000	Natural Gas	0.004	0.015

1 grains per dry standard cubic feet
2 oxygen (diatomic)

Fuel combustion HAPs totals listed in Table 19 were derived from IAS's permit application emissions estimates. The complete listing of HAPs is contained in EPA memorandum titled "Definition of Regulated Air Pollutant for Purposes of Title V, Lydia, N. Wegman, Deputy Director, Office of Air Quality Planning and Standards, EPA, to Air Division Director, Regions I-X.

Table 19. SUMMARY OF REQUESTED POTENTIAL EMISSIONS FOR IDAHO ASPHALT SUPPLY, INC - BLACKFOOT

Source Group	VOCs[1] (T/yr)[8]	PM_{10}[2] (T/yr)	NO_x[3] (T/yr)	CO[4] (T/yr)	SO_2[5] (T/yr)	Benzene (lb/yr)[9]	HCOH[6] (lb/yr)	Aggregated HAPs[7] (T/yr)
Fuel Combustion Equipment	1.28	2.93	23.43	18.26	9.67	0.88	36.47	0.37
Storage Tanks	9.07	NA[10]	NA	NA	NA	65.	72.59	1.92[11]
Loading Racks	5.14	NA	NA	NA	NA	7.56	NA	0.0378
Total	15.49	2.93	23.43	18.26	9.67	73.44	109.06	2.33

1 volatile organic compounds
2 particulate matter with a mean aerodynamic of 10 microns or less
3 nitrogen oxides
4 carbon monoxide
5 sulfur dioxide
6 formaldehyde
7 hazardous air pollutants
8 tons per year
9 pounds per hour
10 not applicable
11 PTE derived from "Estimated Tank Emissions," pages B4-1, B4-2, IAS PTC/Tier II permit application, dated 9-29-03. Acetone, cyclo-hexane, iso-octane, trimethylbenzene are not considered HAPs and aren't included in this value.

Fugitive dust emissions from vehicle traffic on the facility's property, consisting of unpaved areas, were estimated by IAS using US EPA AP-42, Chapter 13.2.2, issued September 1998. PM_{10} emissions from delivery vehicles and customer tanker trucks were estimated to be approximately 3.6 T/yr. Chemical dust suppressant control efficiency was not accounted for in IAS's emission estimate.

Source Testing

Source testing was not conducted for any emissions units or processes for this project.

OPERATING PARAMETERS AND FACTORS

Storage Tanks

Storage Tank Height and Diameter

The physical parameters of each tank's height and diameter have been analyzed by IAS to create a worst-case emissions scenario. The tank height and diameter are generally specified in an equipment listing in the permit. The data presented in Tables 2, 3, and 4 of this memorandum contain the tank size data that IAS requested DEQ list in the facility-wide permit. Each parameter is greater than the tanks' actual parameters.

Storage Tank Throughput and Material Stored and Loading Racks Throughput and Material Transferred

The volatility of products stored in the tanks is directly related to the amount of emissions from the tanks. The volatility is determined by the chemical composition of the materials stored in the tanks. The air pollutants that are emitted from the tanks, biofilters, and the loading racks are determined by the chemical makeup of the products distributed by the facility. IAS submitted a worst-case inventory of materials and is aware that the facility may be limited to the materials and throughputs specified in the inventory. The chemical speciation listed in Attachment A represents the materials that IAS requests to distribute.

Loading Rack Design

Pollutant emissions are related to the design of the loading racks. As listed above there are top loading splash fill racks which create more emissions than either top loading submerged fill and bottom fill loading racks. Loading rack emissions for submerged top loading and bottom loading methods are equivalent. All of IAS's racks are considered "uncontrolled" in that the air pollutant vapors created during the filling of customer carrier tanks with asphaltic products are not collected and returned to the storage tanks, oxidized, or altered to reduce the pollutant emissions.

Operational Factors for Tanks and Loading Racks

VOCs and TAPs emissions are directly dependent upon product formulation and throughput. VOC and TAPs emissions increase in proportion to the volatility of the product stored in tanks and/or transferred through the loading racks to carrier tanks for off-site transport. The chemical composition of each material stored in the tanks and transferred by the loading racks determines the nature and amount of emissions from each source.

IAS stated they have presented their worst-case product formulations in the application. Worst-case product formulations, throughput, design of storage tanks and loading racks, such as splash fill versus submerged pipe filling racks, determine the emission rate of each pollutant. Limiting this facility to all proposed process parameters is necessary to create enforceable restrictions on PTE.

IAS presented an operating scenario with ambient impacts that approach, but do not exceed, the AACC for formaldehyde and for benzene. Therefore, provided the material throughputs in the storage tanks and loading racks remain below the throughputs requested on an annual average basis, the emissions rates of the pollutants are expected to be equal to or below the emissions rates presented by IAS in the ambient impact modeling demonstration.

Product throughput alone does not provide enough information to confirm that IAS is in compliance with the emissions rates presented for the TAPs ambient impact compliance demonstration. The worst-case chemical formulations must be complied with on an annual average basis for any consecutive 12-month period.

The method of material transfer from the loading rack to the customer carrier tank determines the amount of fugitive VOC and TAPs emissions created from this process. Any loading rack that currently employs a bottom fill or an overhead submerged pipe fill method should not be altered to an overhead splash fill design. Overhead splash fill is the worst case pollutant emitting loading rack design. Emissions of the same product at the same ambient conditions are approximately 142% greater from overhead splash loading than overhead submerged pipe, or bottom fill loading designs. This comparison is based on the information contained in AP-42 Section 5.2, Table 5.2-1, Transportation and Marketing of Petroleum Liquids, released January 1995.

Cutback Asphalt Speciation, Throughputs for Tanks 22 and 23, Cutback Asphalt Mixing in Customer Tanks, and Limitation on Cutback Asphalt Loading

The September 29, 2003, submittal from IAS revised asphalt cutback emissions estimates, process design, worst-case product formulation, and requested throughput. IAS requested a limitation on the "fuel" content in the cutback asphalt mixtures distributed at this facility. A limitation on the fuel portion of the asphalt cutback mixture of 24 percent is to be applied on an annual average basis. The limit applies to the combination of kerosene and No. 2 distillate fuel oil. Kerosene has a higher content of benzene than distillate fuel oil #2. Therefore, kerosene content in fuel-based cutback asphalt should be limited to 19.2% of the mixture, which leaves 4.8 percent of the fuel component for distillate fuel oil #2.

There are two ways to view the fuel content limits. First, an annual average limitation, rather than a batch, daily, or monthly enforceable limitation may be applied. Second, a permit limitation requiring the facility to not manufacture material with greater benzene content than listed in the permit application may be applied. Either method could require significant monitoring and recordkeeping.

This annual limitation approach is adequate to support of the TAPs impacts for formaldehyde and benzene, which are annual standards, specified by IDAPA 58.01.01.586. However, if the pollutants of concern for compliance had been listed under the 24-hour standard listed in IDAPA 58.01.01.585, an alternative approach may have been required.

IAS stated that the facility will accept a permit requirement to mix cutback asphalt in-line to customer carrier tanks rather than use Tanks 22 and 23 as process mixing and storage tanks. Tanks 22 and 23 are only allowed to store customer returns of cutback asphalt. Loading Rack #3 is limited to a throughput of 3,668,378 gal/yr cutback asphalt, and Loading Rack #8 is limited to 2,445,586 gal/yr of cutback asphalt. These are rolling 12-month limitations.

Please refer to Table 9 above and Attachment D to this memorandum to review the requested and suggested emissions and throughput limits for the loading racks.

Storage tanks emissions are related to the information provided by IAS, and the facility should be limited to the emission rate, product throughput, and tank physical parameter information contained in Attachment B of this memorandum, and Tables 2-4 of this memorandum.

Fuel Combustion Equipment

Natural Gas Combustion

Boilers CB500 and CB400, Hot Oil Heaters CEI-5000G and CEI-3000 can operate continuously for 8,760 hours per year for each emissions unit. Worst-case annual natural gas combustion rates for the fuel burning equipment are listed below in Table 20. IAS has not included any information on over-firing of these emissions units.

Table 20. NATURAL GAS COMBUSTION – ANNUAL FUEL THROUGHPUT

Emissions Unit	Rated Hourly Natural Gas Throughput (scf/hr)[1]	Potential Annual Natural Gas Throughput (MMscf/yr)[2]
Boiler CB500	20,098	176.06
Boiler CB400	16,471	144.29
Hot Oil Heater CEI-5000G	7,157	62.70
Hot Oil Heater CEI-3000	4,147	36.28
Total	47,873	419.33

[1] standard cubic feet per hour
[2] million standard cubic feet per year

All operational requirements contained in PTC 011-00023, issued 4/13/01, should be included in the facility-wide Tier II OP/PTC. The requirements that pertain to waste oil combustion in the primary boiler are summarized below:

CB500 – Primary boiler

Recycled waste oil combustion should meet the following requirements:

- 260,000 gallons per year;
- 137 gallons per hour recycled waste oil;
- Arsenic content is limited to 1 ppm by weight for each shipment of recycled waste oil, per existing PTC limit and ambient impact demonstration results;
- Cadmium content is limited to 2 ppm for each shipment of recycled waste oil;
- Chromium content is limited to 10 ppm for each shipment of recycled waste oil;
- Sulfur content is limited to 0.5 % by weight, per IDAPA 58.01.01.675;
- Ash content of the recycled waste oil is limited to 2%, to minimize the ash causing PM emissions to exceed the grainloading limitation of 0.05 gr/dscf, corrected to 3% oxygen;
- NSPS – Subpart Dc applies to this boiler due to the dual fuel burner capability. As an affected facility it will be subject to those requirements that apply to a modified source combusting oil. The original PTC for the modification incorporated those emissions limits.

Emissions Limits

All requirements from PTC 011-00023, issued 4/13/01, should be incorporated in the facility-wide Tier II/PTC permit with the exception that emissions limits should be revised as listed in Tables 11 and 12 of this memorandum. The emissions rates in Tables 11 and 12, and Attachment F of this memorandum account for the worst-case potential emissions of air pollutants for 8,760 hours per year, rather than 8,760 hr/yr operation of natural gas, combined with 1,902 hr/yr of recycled waste oil. This recommendation is intended to revise potential emissions for Boiler CB500, in accordance with IDAPA 58.01.01.006.74.

Boilers CB500 and CB400, and hot oil heaters CEI-5000G and CEI-3000 are allowed to operate continuously for each emissions unit (8,760 hours per year) uncontrolled when combusting natural gas. Annual formaldehyde emissions are maximized when the CB500 boiler operates 1,902 hours per year on recycled waste oil, and 6,858 hours per year on natural gas. Benzene emissions from the CB500 boiler are maximized by exclusive natural gas combustion. Refer to Tables 11-15 and Attachment F to this memorandum to review the recommended allowable emissions for the boilers and hot oil heaters.

Boiler CB400 and the two hot oil heaters combust natural gas exclusively, and they are allowed to operate 8,760 hr/yr. Formaldehyde emissions are directly related to each emissions unit's rated heat input capacity and the AP-42 emission factors used to calculate emissions from these sources. Any emissions limitations and recordkeeping should be based on the information contained in the emissions calculations performed by DEQ in the April 13, 2001 PTC project, and the emissions estimates for hot oil heater CEI-3000, submitted by IAS in the application materials. Tracking of natural gas usage is a sufficient parameter for the permittee to monitor and maintain records to determine compliance if the permit for this project contains facility-wide annual benzene and formaldehyde emissions limitations.

DAM/bm T2-030300

ATTACHMENT A

Worst-Case

Product Chemical Speciation

September 29, 2003 Version

Product Chemical Speciation

		Hexane	Benzene	Toluene	Ethylbenzene	Xylene	1,2,4-Trimethyl benzene	Isopropyl benzene	Cyclohexane	Total
Distillate Fuel Oil #2 (a)		0.00010%	0.00080%	0.03200%	0.13000%	0.29000%	1.00000%	0.00000%	0.00000%	1.45290%
Kerosene (a)		0.00500%	0.00400%	0.13300%	0.12700%	0.31000%	0.00000%	0.00000%	0.00000%	0.57900%
Naphtha (a)		1.50000%	0.10000%	2.00000%	0.50000%	2.50000%	0.00000%	0.20000%	1.20000%	8.00000%
Fuel Oil #1 (b)										
- Kerosene:	80%	0.00400%	0.00320%	0.10640%	0.10160%	0.24800%	0.00000%	0.00000%	0.00000%	0.46320%
- Distillate Fuel Oil #2	20%	0.00002%	0.00016%	0.00640%	0.02600%	0.05800%	0.20000%	0.00000%	0.00000%	0.29058%
- Total:	100%	0.00402%	0.00336%	0.11280%	0.12760%	0.30600%	0.20000%	0.00000%	0.00000%	0.75378%
Cracked Heavy Oil Amines (b)										
- Distillate Fuel Oil #2	85%	0.00009%	0.00068%	0.02720%	0.11050%	0.24650%	0.85000%	0.00000%	0.00000%	1.23497%
- DETA	15%	0.00000%	0.00000%	0.00000%	0.00000%	0.00000%	0.00000%	0.00000%	0.00000%	0.00000%
- Total:	100%	0.00009%	0.00068%	0.02720%	0.11050%	0.24650%	0.85000%	0.00000%	0.00000%	1.23497%
Asphalt Emulsion (w/ fuel content) (b)										
- Asphalt Cement	90%	SPECIATE FROM AP-42 CHAPTER 11.1								
- Naphtha:	10.0%	0.15000%	0.01000%	0.20000%	0.05000%	0.25000%	0.00000%	0.02000%	0.12000%	0.80000%
- Total:	100%	0.15000%	0.01000%	0.20000%	0.05000%	0.25000%	0.00000%	0.02000%	0.12000%	0.80000%
Asphalt Cutback (b)										
- Asphalt Cement	76%	SPECIATE FROM AP-42 CHAPTER 11.1								
- Kerosene:	19.2%	0.00096%	0.00077%	0.02554%	0.02438%	0.05952%	0.00000%	0.00000%	0.00000%	0.11117%
- Distillate Fuel Oil #2	4.8%	0.00000%	0.00004%	0.00154%	0.00624%	0.01392%	0.04800%	0.00000%	0.00000%	0.06974%
- Total:	100%	0.00096%	0.00081%	0.02707%	0.03062%	0.07344%	0.04800%	0.00000%	0.00000%	0.18091%

Notes: (a) Speciation profiles from TANKS 4.0 database. Exception is benzene content in jet naphtha, substituted value listed in MSDS.
(b) Speciation profiles determined from worst-case facility product recipes and available information for raw products.

ATTACHMENT B

Storage Tank Emissions Estimates -

Potential to Emit at Requested Throughputs,

Requested Storage Tank Design,

and Product Specifications

Dated September 29, 2003, submitted by Idaho Asphalt Supply, Blackfoot

Estimated Tank Emissions (lb/yr) [1]

Tank ID	Criteria Pollutants		Hazardous Air Pollutants																													
	VOC	BRC?	Acetone	BRC?	Benzene	BRC?	MEK	BRC?	Carbon Disulfide	BRC?	Cyclo-hexane	BRC?	DETA	BRC?	Ethyl-benzene	BRC?	Formaldehyde	BRC?	n-Hexane	BRC?	Iso-octane	BRC?	Methylene Chloride	BRC?	Styrene	BRC?	Toluene	BRC?	Trimethyl-benzene	Total Xylene	BRC?
	AP-42 EF: [2]		0.055%		0.032%		0.039%		0.016%		ND		ND		0.026%		0.66%		0.10%		0.00231%		0.00275%		0.0054%		0.062%		ND	note 5	
4	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
5	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
6	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
7	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
8	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
9	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
10	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
11	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
14	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
15	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
16	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
17	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
18	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
[redacted]																																
[redacted]																																
[redacted]																																
[redacted]																																
74	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
75	643.95	yes	0.36	yes	0.17	yes	0.21	yes	0.09	yes	ND	yes	ND	yes	0.21	yes	3.79	Level	0.54	yes	0.00	yes	0.00	yes	0.03	yes	0.34	yes	ND	1.40	yes
320-1 [3]	181.16	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	1.04	Level	0.15	yes	0.00	yes	0.00	yes	0.01	yes	0.09	yes	ND	1.40	yes
2320-1 [3]	4.77	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	0.03	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	1.40	yes
44	1.97	yes	0.00	yes	6.39E-04	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	0.01	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	0.01	yes
46	1.97	yes	0.00	yes	6.39E-04	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	0.01	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	0.01	yes
48	1.97	yes	0.00	yes	6.39E-04	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	0.01	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	0.01	yes
47	1.97	yes	0.00	yes	6.39E-04	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	0.01	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	0.01	yes
49	1.97	yes	0.00	yes	6.39E-04	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	0.01	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	0.01	yes
51	1.97	yes	0.00	yes	6.39E-04	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	0.01	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	0.01	yes
52	1.97	yes	0.00	yes	6.39E-04	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	0.01	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	0.01	yes
53	1.97	yes	0.00	yes	6.39E-04	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	0.01	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	0.01	yes
54	1.97	yes	0.00	yes	6.39E-04	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	0.01	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	0.01	yes
56	1.97	yes	0.00	yes	6.39E-04	yes	0.00	yes	0.00	yes	ND	yes	ND	yes	0.00	yes	0.01	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	0.00	yes	ND	0.01	yes
45	2,596	yes	0.00	yes	27.66	no	0.00	yes	0.00	yes	387.64	yes	ND	yes	21.57	yes	0.01	yes	908	yes	0.00	yes	0.00	yes	0.00	yes	202.36	yes	ND	92.48	yes
50	2,596	yes	0.00	yes	27.66	no	0.00	yes	0.00	yes	387.64	yes	ND	yes	21.57	yes	0.01	yes	908	yes	0.00	yes	0.00	yes	0.00	yes	202.36	yes	ND	92.48	yes
22	181	yes	0.00	yes	0.00	Level	0.00	yes	0.00	yes	ND	yes	ND	yes	170.18	yes	0.03	yes	26.96	yes	0.00	yes	0.00	yes	0.00	yes	283.67	yes	101.34	391.72	yes
23	181	yes	0.00	yes	0.00	Level	0.00	yes	0.00	yes	ND	yes	ND	yes	170.18	yes	0.03	yes	26.96	yes	0.00	yes	0.00	yes	0.00	yes	283.67	yes	101.34	391.72	yes

Estimated Tank Emissions (lb/yr) (1)

Tank ID	Criteria Pollutants		Hazardous Air Pollutants																											
	VOC	BRC?	Acetone	BRC?	Benzene	BRC?	MEK	BRC?	Carbon Disulfide	BRC?	Cyclo-hexane	BRC?	DETA	BRC?	Ethyl-benzene	BRC?	Formald-ehyde	BRC?	n-Hexane	BRC?	Iso-octane	BRC?	Methylene Chloride	BRC?	Styrene	BRC?	Toluene	BRC?	Trimethyl-benzene	Total Xylene	BRC?
	AP-42 EF: (4)		0.055%		0.032%		0.039%		0.016%		ND		ND		0.038%		0.69%		0.10%		0.00031%		0.00027%		0.0054%		0.062%		ND	note 5	
[illegible]																															
A	0.43	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	ND	yes
B	64.14	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	ND	yes
G	0.11	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	ND	yes
J	0.11	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	ND	yes
K	0.11	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	yes	ND	ND	yes
2	12.48	yes	ND	yes	0.03	yes	ND	yes	ND	yes	ND	yes	ND	yes	0.29	yes	ND	yes	0.01	yes	ND	yes	ND	yes	ND	yes	0.29	yes	0.67	0.73	yes
3	20.46	yes	ND	yes	0.16	yes	ND	yes	ND	yes	ND	yes	ND	yes	0.88	yes	ND	yes	0.30	yes	ND	yes	ND	yes	ND	yes	1.76	yes	ND	1.39	yes
12	2.07	yes	ND	yes	0.00	yes	ND	yes	ND	yes	ND	yes	0.28	yes	0.09	yes	ND	yes	0.00	yes	ND	yes	ND	yes	ND	yes	0.06	yes	0.17	0.17	yes
19	2.07	yes	ND	yes	0.00	yes	ND	yes	ND	yes	ND	yes	0.28	yes	0.09	yes	ND	yes	0.00	yes	ND	yes	ND	yes	ND	yes	0.06	yes	0.17	0.17	yes
20	2.07	yes	ND	yes	0.00	yes	ND	yes	ND	yes	ND	yes	0.28	yes	0.09	yes	ND	yes	0.00	yes	ND	yes	ND	yes	ND	yes	0.06	yes	0.17	0.17	yes
24	16.76	yes	ND	yes	0.03	yes	ND	yes	ND	yes	ND	yes	ND	yes	0.55	yes	ND	yes	0.01	yes	ND	yes	ND	yes	ND	yes	0.37	yes	0.84	1.04	yes
25	121.89	yes	ND	yes	0.16	yes	ND	yes	ND	yes	ND	yes	ND	yes	0.50	yes	ND	yes	0.29	yes	ND	yes	ND	yes	ND	yes	1.37	yes	ND	0.90	yes
26	16.76	yes	ND	yes	0.03	yes	ND	yes	ND	yes	ND	yes	ND	yes	0.55	yes	ND	yes	0.01	yes	ND	yes	ND	yes	ND	yes	0.37	yes	0.84	1.04	yes
27	121.89	yes	ND	yes	0.16	yes	ND	yes	ND	yes	ND	yes	ND	yes	0.50	yes	ND	yes	0.29	yes	ND	yes	ND	yes	ND	yes	1.37	yes	ND	0.99	yes
28	5.56	yes	ND	yes	0.01	yes	ND	yes	ND	yes	ND	yes	ND	yes	0.19	yes	ND	yes	0.00	yes	ND	yes	ND	yes	ND	yes	0.12	yes	0.31	0.34	yes
29	1,711	yes	ND	yes	3.09	Level I	ND	yes	ND	yes	38.47	yes	ND	yes	1.37	yes	ND	yes	75.42	yes	ND	yes	ND	yes	ND	yes	17.07	yes	ND	6.71	yes
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
69	2.07	yes	ND	yes	0.00	yes	ND	yes	ND	yes	ND	yes	0.28	yes	0.09	yes	ND	yes	0.00	yes	ND	yes	ND	yes	ND	yes	0.06	yes	0.17	0.17	yes
[illegible]																															
Total (lb/yr)	18,141	NA	6.79	NA	65	NA	4.10	NA	1.00	NA	654	NA	1.40	NA	392.01	NA	72.89	NA	1,357	NA	0.03	NA	0.03	NA	0.57	NA	1,002	NA	206	951	NA
Total (ton/yr)	9.07	NA	2.8E-03	NA	0.03	NA	2.1E-03	NA	8.4E-04	NA	0.33	NA	7.0E-04	NA	0.20	NA	3.6E-02	NA	0.6785	NA	1.5E-05	NA	1.42E-05	NA	2.8E-04	NA	0.60	NA	1.0E-01	0.48	NA
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.01	NA	4.7E-04	NA	1.9E-04	NA	0.07	NA	1.4E-04	NA	0.04	NA	6.3E-03	NA	0.1549	NA	3.7E-06	NA	3.2E-06	NA	6.5E-05	NA	0.11	NA	2.4E-02	0.11	NA

Estimated Biofilter Emissions (lb/yr) (2)

Biofilter ID	Criteria Pollutants		Hazardous Air Pollutants																											
	VOC	BRC?	Acetone	BRC?	Benzene	BRC?	MEK	BRC?	Carbon Disulfide	BRC?	Cyclo-hexane	BRC?	DETA	BRC?	Ethyl-benzene	BRC?	Formald-ehyde	BRC?	n-Hexane	BRC?	Iso-octane	BRC?	Methylene Chloride	BRC?	Styrene	BRC?	Toluene	BRC?	Trimethyl-benzene	Total Xylene	BRC?
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
West Biofilter	[illegible]	[illegible]	[illegible]	yes	[illegible]	Level I	[illegible]	yes	[illegible]	yes	[illegible]	yes	[illegible]	yes	[illegible]	yes	[illegible]	yes	[illegible]	yes	[illegible]	yes	[illegible]	yes	[illegible]	yes	[illegible]	yes	[illegible]	[illegible]	yes

Notes:

Significant - Emission levels listed in IDAPA 58.01.01.006.92 that are considered significant.

EL: Emission Screening Limit for hazardous air pollutants listed in IDAPA 58.01.01.585 and 586. If estimated emissions are less than EL air dispersion modeling is not required.

BRC: Below Regulatory Concern (IDAPA 58.01.01.221 and 223.01). 10 % of Significant levels for criteria pollutants and 10% of EL for hazardous air pollutants.

NA: Not Applicable

ND: Not determined/below detection.

(1) VOC emissions from storage tanks estimated utilizing TANKS 4.0. Speciation of VOC emissions from asphalt storage tanks (and asphalt cement portion of mixed products) estimated utilizing emission factors contained in Table 11.1-16 of AP-42 Chapter 11.1. Speciation of emissions from fuels and fuel additives based on available speciation profiles and MSDS documents, where appropriate.

(2) Biofilter emissions are composed of tank emissions routed to each filter. Shading is utilized on the table to denote which tanks are routed to which biofilter. No control efficiency is claimed for permitting purposes. Emissions are not additive (that is, emissions are released either from the individual tank or the through the biofilter).

(3) Tanks 320-1 and 2320-1 are process tanks, not long-term storage tanks, emissions are not routed through biofilters.

(4) Emission factors listed in Table 11.1-16 of AP-42, Chapter 11.1 (for asphalt cement products only). To calculate emission rate, the emission factor is multiplied by the estimated total VOC rate that was estimated using TANKS 4.0.

(5) Asphalt cement total xylene composition is 0.41% m-/p- xylenes and 0.08% o-xylene.

B4-2 (revised 9-29-03)

ATTACHMENT C

DEQ Verification of

Storage Tank Emission Estimates

Idaho Asphalt Supply - Blackfoot

Storage Tank Emissions Summary

Idaho Asphalt Supply estimated VOCs and speciated TAPs emissions using AP-42 Chapter 11.15

AP-42 Section 11.1 Asphalt Cement TAP/HAP speciation

Material	Chemical Compound (%)
Acetone	0.055
Benzene	0.032
MEK	0.039
Carbon disulfide	0.016
cyclohexane	no data
DETA	no data
ethylbenzene	0.039
Formaldehy	0.69
n-Hexane	0.1
Iso-octane	0.00031
Methylene chloride	0.00027
Styrene	0.0064
Toluene	0.082
Tri-methyl benzene	no data
Xylenes (total) isomers)	0.49

Multiply Chemical compound by %/100 * VOC Emissions to estimate TAPs from asphalt cement at elevated temps.

WEST BIOFILTER CONTROLLED TANKS

Storage Tank ID	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions
	Pollutants and averaging periods							
	VOCs		Acetone		Benzene		Methyl Ethyl Ketone	
	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
The following tanks handle asphalt cements								
4	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
5	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
6	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
7	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
8	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
9	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
10	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
13	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
14	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
15	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
16	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
17	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
18	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
74	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
75	543.95	6.21E-02	0.3	3.42E-05	0.17	1.94E-05	0.21	2.40E-05
West Biofilter Summary	8158.25	9.31E-01	4.5	5.14E-04	2.55	2.91E-04	3.15	3.60E-04

WEST BIOFILTER CONTROLLED TANKS (Continued)

Storage Tank ID	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions
	Pollutants and averaging periods									
	Carbon Disulfide		Cyclo-hexane		DETA		Ethyl benzene		Formaldehyde	
	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
The following tanks handle asphalt cements										
4	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
5	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
6	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
7	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
8	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
9	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
10	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
13	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
14	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
15	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
16	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
17	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
18	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
74	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
75	0.09	1.0274E-05	No data	No data	No data	No data	0.21	2.40E-05	3.75	4.28E-04
West Biofilter Summary	1.35	1.54E-04	No data	No data	No data	No data	3.15	3.60E-04	56.25	6.42E-03

EAST BIOFILTER CONTROLLED TANKS

Storage Tank ID	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions
	Pollutants and averaging periods							
	VOCs		Acetone		Benzene		Methyl Ethyl Ketone	
	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
The following tanks handle asphalt cements								
35	543.95	6.21E-02	2.99E-01	3.42E-05	0.17	1.99E-05	0.21	2.42E-05
36	543.95	6.21E-02	2.99E-01	3.42E-05	0.17	1.99E-05	0.21	2.42E-05
37	543.95	6.21E-02	2.99E-01	3.42E-05	0.17	1.99E-05	0.21	2.42E-05
38	543.95	6.21E-02	2.99E-01	3.42E-05	0.17	1.99E-05	0.21	2.42E-05
66	2.07	2.36E-04	no data	no data	0.00	7.56E-08	no data	no data
EAST Biofilter Summary	2177.87	2.49E-01	1.19699	1.37E-04	0.70	7.98E-05	0.86	9.86E-05

EAST BIOFILTER CONTROLLED TANKS (continued)

Storage Tank ID	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions
	Carbon Disulfide		Cyclo-hexane		DETA		Ethyl benzene		Formaldehyde	
	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
The following tanks handle asphalt cements										
35	0.09	9.9352E-06	No data	No data	No data	No data	0.21	2.36E-05	3.753255	4.28E-04
36	0.09	9.9352E-06	No data	No data	No data	No data	0.21	2.36E-05	3.753255	4.28E-04
37	0.09	9.9352E-06	No data	No data	No data	No data	0.21	2.36E-05	3.753255	4.28E-04
38	0.09	9.9352E-06	No data	No data	No data	No data	0.21	2.36E-05	3.753255	4.28E-04
66	no data	no data	No data	No data	0.28	3.19635E-05	0.00	1.03E-05	No data	No data
EAST Biofilter Summary	0.35	3.97E-05	No data	No data	0.28	3.20E-05	0.92	1.05E-04	15.01302	1.71E-03

WEST BIOFILTER CONTROLLED TANKS (continued)

TANK ID	n-Hexane Annual Emissions (lb/yr)	n-Hexane Hourly Emissions (lb/hr)	Iso-octane Annual Emissions (lb/yr)	Iso-octane Hourly Emissions (lb/hr)	Methylene Chloride Annual Emissions (lb/yr)	Methylene Chloride Hourly Emissions (lb/hr)
4	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
5	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
6	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
7	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
8	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
9	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
10	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
13	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
14	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
15	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
16	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
17	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
18	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
74	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
75	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
West Biofilter Summary	8.10	9.25E-04	0.025	2.85E-06	0.022	2.51E-06

WEST BIOFILTER CONTROLLED TANKS (continued)

TANK ID	Styrene Annual Emissions (lb/yr)	Styrene Hourly Emissions (lb/hr)	Toluene Annual Emissions (lb/yr)	Toluene Hourly Emissions (lb/hr)	Trimethylbenzene Annual Emissions (lb/yr)	Trimethylbenzene Hourly Emissions (lb/hr)	Xylenes (m-, o-, p-isomers) Annual Emissions (lb/yr)	Xylenes (m-, o-, p-isomers) Hourly Emissions (lb/hr)
4	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
5	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
6	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
7	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
8	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
9	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
10	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
13	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
14	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
15	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
16	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
17	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
18	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
74	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
75	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
West Biofilter Summary	4.41E-01	5.03E-05	5.06E+00	5.77E-04	no data	no data	4.00E+01	4.56E-03

EAST BIOFILTER CONTROLLED TANKS (continued)

TANK ID	n-Hexane Annual Emissions (lb/yr)	n-Hexane Hourly Emissions (lb/hr)	Iso-octane Annual Emissions (lb/yr)	Iso-octane Hourly Emissions (lb/hr)	Methylene Chloride Annual Emissions (lb/yr)	Methylene Chloride Hourly Emissions (lb/hr)
35	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
36	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
37	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
38	0.54	6.16E-05	0.0017	1.90E-07	0.0015	1.67E-07
88	0	0.00E+00	no data	no data	no data	no data
EAST Biofilter Summary	2.16	2.47E-04	0.025	7.91E-07	0.023	6.70E-07

EAST BIOFILTER CONTROLLED TANKS (continued)

TANK ID	Styrene Annual Emissions (lb/yr)	Styrene Hourly Emissions (lb/hr)	Toluene Annual Emissions (lb/yr)	Toluene Hourly Emissions (lb/hr)	Trimethylbenzene Annual Emissions (lb/yr)	Trimethylbenzene Hourly Emissions (lb/hr)	Xylenes (m-, o-, p-isomers) Annual Emissions (lb/yr)	Xylenes (m-, o-, p-isomers) Hourly Emissions (lb/hr)
35	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
36	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
37	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
38	2.94E-02	3.35E-06	3.37E-01	3.85E-05	no data	no data	2.67E+00	3.04E-04
88	no data	no data	6.00E-02	6.85E-06	0.17	1.94E-05	1.76E-01	1.94E-05
EAST Biofilter Summary	1.17E-01	1.34E-05	1.41E+00	1.61E-04	1.70E-01	1.94E-05	1.06E+01	1.24E-03

UNCONTROLLED STORAGE TANKS

Storage Tank ID	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions
Pollutants and averaging periods	VOCs		Acetone		Benzene		Methyl Ethyl Ketone	
	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
The following tanks are part of the asphalt production process (SD-1 and 320-1 are primarily process tanks.								
320-1	151.16	1.73E-02	8.31E-02	9.49E-06	0.048371	5.52E-06	3.90E-02	6.73E-06
2320-1	4.77	5.15E-04	2.62E-03	2.99E-07	0.001526	1.74E-07	1.86E-03	2.12E-07
The following tanks are part of the asphalt production process (Emissions calculated as per by Tank Table B4-1 (revision 9-20-03)								
44	1.97	2.25E-04	1.08E-03	1.24E-07	0.00063	7.20E-08	7.68E-04	8.77E-08
45	1.97	2.25E-04	1.08E-03	1.24E-07	0.00063	7.20E-08	7.68E-04	8.77E-08
46	1.97	2.25E-04	1.08E-03	1.24E-07	0.00063	7.20E-08	7.68E-04	8.77E-08
47	1.97	2.25E-04	1.08E-03	1.24E-07	0.00063	7.20E-08	7.68E-04	8.77E-08
48	1.97	2.25E-04	1.08E-03	1.24E-07	0.00063	7.20E-08	7.68E-04	8.77E-08
51	1.97	2.25E-04	1.08E-03	1.24E-07	0.00063	7.20E-08	7.68E-04	8.77E-08
52	1.97	2.25E-04	1.08E-03	1.24E-07	0.00063	7.20E-08	7.68E-04	8.77E-08
53	1.97	2.25E-04	1.08E-03	1.24E-07	0.00063	7.20E-08	7.68E-04	8.77E-08
54	1.97	2.25E-04	1.08E-03	1.24E-07	0.00063	7.20E-08	7.68E-04	8.77E-08
55	1.97	2.25E-04	1.08E-03	1.24E-07	0.00063	7.20E-08	7.68E-04	8.77E-08
The following tanks are part of the asphalt production process. Emissions								
49	2597.93	2.97E-01	7.15E-05	8.16E-09	27.85	3.18E-03	5.07E-05	5.79E-09
50	2597.93	2.97E-01	7.15E-05	8.16E-09	27.85	3.18E-03	5.07E-05	5.79E-09
The following tanks are part of the asphalt production process. Emissions calculated								
22	161.39	1.84E-02	negligible	negligible	0.93	1.06E-04	negligible	negligible
23	161.39	1.84E-02	negligible	negligible	0.93	1.06E-04	negligible	negligible
The following tanks are part of the asphalt production process. Emissions calculated from								
A	9.43	1.08E-03	no data	no data	no data	no data	no data	no data
B	64.14	7.32E-03	no data	no data	no data	no data	no data	no data
G	0.11	1.26E-05	no data	no data	no data	no data	no data	no data
J	0.11	1.26E-05	no data	no data	no data	no data	no data	no data
K	0.11	1.26E-05	no data	no data	no data	no data	no data	no data
2	12.48	1.42E-03	no data	no data	0.03	3.42E-06	no data	no data
3	20.48	2.34E-03	no data	no data	0.16	1.83E-05	no data	no data
12	2.07	2.36E-04	no data	no data	negligible	negligible	no data	no data
19	2.07	2.36E-04	no data	no data	negligible	negligible	no data	no data
20	2.07	2.36E-04	no data	no data	negligible	negligible	no data	no data
24	16.78	1.92E-03	no data	no data	0.03	3.42E-06	no data	no data
25	121.88	1.39E-02	no data	no data	0.15	1.71E-05	no data	no data
26	5.55	6.34E-04	no data	no data	0.03	3.42E-06	no data	no data
27	121.88	1.39E-02	no data	no data	0.15	1.71E-05	no data	no data
28	5.56	6.34E-04	no data	no data	0.01	1.14E-06	no data	no data
29	1711.47	1.95E-01	no data	no data	3.08	3.52E-04	no data	no data
69	2.07	2.36E-04	no data	no data	0.000692	7.89E-08	no data	no data
Subtotal Uncontrolled Tanks	7792.52	8.12E-01	0.0957395	1.10E-05	61.25	6.47E-03	0.069	7.83E-06

UNCONTROLLED STORAGE TANKS (continued)

Storage Tank ID	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions
Pollutants and averaging periods	Carbon Disulfide		Cyclo-hexane		DETA (diethylene triamine)		Ethyl benzene		Formaldehyde	
	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
The following tanks are part of the asphalt production process (SD-1 and 320-1 are primarily process tanks.										
320-1	0.0241858	2.76095E-06	No data	No data	No data	No data	0.057441	6.56E-06	1.043	1.19E-04
2320-1	0.0007632	8.71235E-08	No data	No data	No data	No data	0.001813	2.07E-07	0.033	3.76E-06
The following tanks are part of the asphalt production process (Emissions calculated as per by Tank Table B4-1 (revision 9-20-03)										
44	0.0003152	3.5982E-08	No data	No data	No data	No data	0.000749	8.55E-08	0.014	1.55E-06
45	0.0003152	3.5982E-08	No data	No data	No data	No data	0.000749	8.55E-08	0.014	1.55E-06
46	0.0003152	3.5982E-08	No data	No data	No data	No data	0.000749	8.55E-08	0.014	1.55E-06
47	0.0003152	3.5982E-08	No data	No data	No data	No data	0.000749	8.55E-08	0.014	1.55E-06
48	0.0003152	3.5982E-08	No data	No data	No data	No data	0.000749	8.55E-08	0.014	1.55E-06
51	0.0003152	3.5982E-08	No data	No data	No data	No data	0.000749	8.55E-08	0.014	1.55E-06
52	0.0003152	3.5982E-08	No data	No data	No data	No data	0.000749	8.55E-08	0.014	1.55E-06
53	0.0003152	3.5982E-08	No data	No data	No data	No data	0.000749	8.55E-08	0.014	1.55E-06
54	0.0003152	3.5982E-08	No data	No data	No data	No data	0.000749	8.55E-08	0.014	1.55E-06
55	0.0003152	3.5982E-08	No data	No data	No data	No data	0.000749	8.55E-08	0.014	1.55E-06
The following tanks are part of the asphalt production process. Emissions.										
49	0.0000206	2.3744E-09	307.64	0.035119	No data	No data	21.57	2.46E-03	0.0009	1.02E-07
50	0.0000206	2.3744E-09	307.64	0.035119	No data	No data	21.57	2.46E-03	0.0009	1.02E-07
The following tanks are part of the asphalt production process. Emissions calculated										
22	negligible	negligible	negligible	negligible	No data	No data	8.83	9.74E-04	0.9848	5.28E-07
23	negligible	negligible	negligible	negligible	No data	No data	8.83	9.74E-04	0.9848	5.28E-07
The following tanks are part of the asphalt production process. Emissions calculated from										
A	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
B	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
G	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
J	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
K	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
2	no data	no data	no data	no data	no data	no data	0.39	4.45E-05	no data	no data
3	no data	no data	no data	no data	0.28	3.19535E-05	6.66	7.63E-06	no data	no data
12	no data	no data	no data	no data	0.28	3.19535E-05	0.09	1.03E-05	no data	no data
19	no data	no data	no data	no data	0.28	3.19535E-05	0.09	1.03E-05	no data	no data
20	no data	no data	no data	no data	no data	no data	0.09	1.03E-05	no data	no data
24	no data	no data	no data	no data	no data	no data	0.53	6.28E-05	no data	no data
25	no data	no data	no data	no data	no data	no data	0.5	5.71E-05	no data	no data
26	no data	no data	no data	no data	no data	no data	0.55	6.28E-05	no data	no data
27	no data	no data	no data	no data	no data	no data	0.5	5.71E-05	no data	no data
28	no data	no data	no data	no data	no data	no data	0.18	2.05E-05	no data	no data
29	no data	no data	36.47	0.004392	no data	no data	1.37	1.64E-04	No data	No data
69	no data	no data	No data	No data	0.28	3.19535E-05	0.09	1.03E-05	No data	No data
Subtotal Uncontrolled Tanks	0.028	3.21E-06	No data	No data	No data	No data	55.32874	6.31E-03	1.218284	1.39E-04

FACILITY-WIDE TOTALS

VOCs (lb/yr)	Acetone (lb/yr)	Benzene (lb/yr)	Methyl Ethyl Ketone (lb/yr)
[8128.8	5.6	64.5	4.1

FACILITY-WIDE TOTALS (continued)

Carbon Disulfide (lb/yr)	Cyclo-hexane (lb/yr)	DETA (diethylene triamine) (lb/yr)	Ethyl benzene (lb/yr)	Formaldehyde (lb/yr)
1.7	453.8	1.4	89.4	72.48

Values listed in bold are less than the values presented by IAS in the September 29, 2003 submittal which modified the requested emissions inventory. IAS's emission estimates are conservative.

UNCONTROLLED STORAGE TANKS (continued)							UNCONTROLLED STORAGE TANKS (continued)									
TANK ID	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	TANK ID	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions	Annual Emissions	Hourly Emissions
	n-Hexane		Iso-octane		Methylene Chloride			Styrene		Toluene		Trimethylbenzene		Xylenes (m-, o-, p-isomers)	
	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)		(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)
320-1	9.15116	1.73E-06	4.69E-04	8.35E-08	4.08E-04	4.66E-08	320-1	8.16E-03	9.32E-07	9.37E-02					
2720-1															
44	0.00197	2.25E-07	8.11E-06	6.97E-10	5.32E-06	6.07E-10	44		1.21E-06	1.22E-03	1.39E-07	no data	no data	9.65E-03	
45	0.00197	2.25E-07	8.11E-06	6.97E-10	5.32E-06	6.07E-10	45	1.06E-04	1.21E-06	1.22E-03	1.39E-07	no data	no data	9.65E-03	1.10E-06
46	0.00197	2.25E-07	8.11E-06	6.97E-10	5.32E-06	6.07E-10	46	1.06E-04	1.21E-06	1.22E-03	1.39E-07	no data	no data	9.65E-03	1.10E-06
47	0.00197	2.25E-07	8.11E-06	6.97E-10	5.32E-06	6.07E-10	47	1.06E-04	1.21E-06	1.22E-03	1.39E-07	no data	no data	9.65E-03	1.10E-06
48	0.00197	2.25E-07	8.11E-06	6.97E-10	5.32E-06	6.07E-10	48	1.06E-04	1.21E-06	1.22E-03	1.39E-07	no data	no data	9.65E-03	1.10E-06
51	0.00197	2.25E-07	8.11E-06	6.97E-10	5.32E-06	6.07E-10	51	1.06E-04	1.21E-06	1.22E-03	1.39E-07	no data	no data	9.65E-03	1.10E-06
52	0.00197	2.25E-07	8.11E-06	6.97E-10	5.32E-06	6.07E-10	52	1.06E-04	1.21E-06	1.22E-03	1.39E-07	no data	no data	9.65E-03	1.10E-06
53	0.00197	2.25E-07	8.11E-06	6.97E-10	5.32E-06	6.07E-10	53	1.06E-04	1.21E-06	1.22E-03	1.39E-07	no data	no data	9.65E-03	1.10E-06
54	0.00197	2.25E-07	8.11E-06	6.97E-10	5.32E-06	6.07E-10	54	1.06E-04	1.21E-06	1.22E-03	1.39E-07	no data	no data	9.65E-03	1.10E-06
55	0.00197	2.25E-07	8.11E-06	6.97E-10	5.32E-06	6.07E-10	55	1.06E-04	1.21E-06	1.22E-03	1.39E-07	no data	no data	9.65E-03	1.10E-06
49	505.59	6.91E-02	4.03E-07	4.60E-11	3.51E-07	4.01E-11	49	7.02E-06	8.01E-10	2.02E+02	2.31E-02	no data	no data	92.46	1.06E-02
50	505.59	6.91E-02	0.00E+00	0.00E+00	3.51E-07	4.01E-11	50	7.02E-06	8.01E-10	2.02E+02	2.31E-02	no data	no data	92.46	1.06E-02
22	1.48	1.66E-04	1.67E-03	1.90E-07	negligible	negligible	22	negligible	negligible	14.22	1.62E-03	5.66	5.80E-04	18.14	2.07E-03
23	1.48	1.66E-04	1.67E-03	1.90E-07	negligible	negligible	23	negligible	negligible	14.22	1.62E-03	5.66	5.80E-04	18.14	2.07E-03
A	no data	no data	no data	no data	no data	no data	A	no data	no data	no data	no data	no data	no data	no data	no data
B	no data	no data	no data	no data	no data	no data	B	no data	no data	no data	no data	no data	no data	no data	no data
G	no data	no data	no data	no data	no data	no data	G	no data	no data	no data	no data	no data	no data	no data	no data
J	no data	no data	no data	no data	no data	no data	J	no data	no data	no data	no data	no data	no data	no data	no data
K	no data	no data	no data	no data	no data	no data	K	no data	no data	no data	no data	no data	no data	no data	no data
2	0.01	1.14E-06	no data	no data	no data	no data	2	no data	no data	2.90E-01	3.31E-05	0.57	6.51E-05	7.30E-01	8.33E-05
3	0.3	3.42E-05	no data	no data	no data	no data	3	no data	no data	1.76E+00	2.01E-04	no data	no data	1.36E+00	1.55E-04
12	negligible	negligible	no data	no data	no data	no data	12	no data	no data	8.00E-02	9.85E-06	0.17	1.94E-05	1.70E-01	1.94E-05
19	negligible	negligible	no data	no data	no data	no data	19	no data	no data	8.00E-02	9.85E-06	0.17	1.94E-05	1.70E-01	1.94E-05
20	negligible	negligible	no data	no data	no data	no data	20	no data	no data	8.00E-02	9.85E-06	0.17	1.94E-05	1.70E-01	1.94E-05
24	0.01	1.14E-06	no data	no data	no data	no data	24	no data	no data	3.70E-01	4.22E-05	0.94	1.07E-04	1.04E+00	1.19E-04
25	0.29	3.31E-05	no data	no data	no data	no data	25	no data	no data	1.37E+00	1.56E-04	no data	no data	9.90E-01	1.13E-04
26	0.01	1.14E-06	no data	no data	no data	no data	26	no data	no data	3.70E-01	4.22E-05	0.94	1.07E-04	1.04E+00	1.19E-04
27	0.29	3.31E-05	no data	no data	no data	no data	27	no data	no data	1.37E+00	1.56E-04	no data	no data	9.90E-01	1.13E-04
28	negligible	negligible	no data	no data	no data	no data	28	no data	no data	1.20E-01	1.37E-05	0.31	3.54E-05	3.40E-01	3.88E-05
29	76.42	8.72E-03	no data	no data	no data	no data	29	No data	no data	1.71E+01	1.95E-03	No data	no data	5.71E+00	6.52E-04
69	0	0.00E+00	no data	no data	no data	no data	69	No data	no data	8.00E-02	9.85E-06	0.17	1.94E-05	1.70E-01	1.94E-05
Subtotal	1292.12	1.39E-01	0.035	2.52E-07	0.022	5.42E-08	Subtotal	0.50E-03	1.08E-06	4.19E+02	4.78E-02	13.49	5.80E-04	234.98	2.33E-02
for Uncontrolled Tanks							for Uncontrolled Tanks								

FACILITY-WIDE TOTALS (continued)							FACILITY-WIDE TOTALS (continued)								
	n-Hexane		Iso-octane		Methylene Chloride			Styrene		Toluene		Trimethylbenzene		Xylenes (m-, o-, p-isomers)	
	(lb/yr)		(lb/yr)		(lb/yr)			(lb/yr)		(lb/yr)		(lb/yr)		(lb/yr)	
	1382.4		0.1		0.1			0.6		425.5		13.8		243.8	

ATTACHMENT D

Loading Racks Allowable Throughputs

and

Total Volatile Organic Compounds/Benzene Emissions Rates

Loading Rack Throughputs and Related Emissions
Idaho Asphalt Supply, Inc. (Blackfoot)
Combined PTC/Tier II OP

Product	Volume of Material Transferred (gallons per year)	Total Organic Compounds Annual Emissions (Tons/yr)	Total Organics Hourly Emissions (lb/hr)	Benzene Annual Emissions (Tons/yr)	Benzene Hourly Emissions (lb/hr)
Asphalt Cement (total)	**22187146**	**0.25**	**0.057**	**ND**	**ND**
Loading Rack #1	22187146	0.25	0.057	ND	ND
Polymer-modified Asphalt	**21074683**	**0.23**	**0.00525**	**ND**	**ND**
Loading Rack #2 (30% PMA)	6322405	0.069	0.00158	ND	ND
Loading Rack #4 (70% PMA)	14752278	0.161	0.00368	ND	ND
Asphalt Emulsions (water-based)	**26313742**	**0.14**	**0.032**	**ND**	**ND**
Loading Racks #5 and #6 combined	26313742	0.14	0.032	ND	ND
Asphalt Emulsions (Fuel-based)	**2518352**	**0.92**	**0.2100457**	**8.80E-04**	**2.01E-04**
Loading Racks #5 and #6 combined	2518352	0.92	0.2100457	8.80E-04	2.01E-04
Asphalt Cutback (Medium Cure)	**6113964**	**3.6**	**0.82**	**2.90E-03**	**6.62E-04**
Loading Rack # 3 (60% of total)	3668378	2.16	0.49	1.74E-03	3.97E-04
Loading Rack # 8 (40% of total)	2445586	1.44	0.33	1.16E-03	2.65E-04

Note: Actual hourly emissions will actually be greater than represented in this table. The loading racks were assumed to operate 8,760 hours per year which will be greater than actually occurs.

Asphalt cement products are generally not distributed during the winter months, so those operating hours should not be counted in the hourly emission rate estimates. However, this approach is valid for estimating gram per second emissions rates of benzene to use in modeling, because the benzene AACC in IDAPA 58.01.01.586 is an annual standard.

ND = not determined

ATTACHMENT E

Emissions Estimates for Fuel Burning Equipment,

submitted by Idaho Asphalt Supply,

dated January 14, 2003

Combustion Source Characteristics	
Combustion Unit ID	Primary Boiler
Manufacturer	Cleaver Brooks
Model	CB600
Input Heat Capacity (BTU/hr)	20,500,000
Stack Height (ft)	32.00
Stack Height (m)	15.85
[redacted] (ft)	1.66
[redacted] (m)	0.60
Exit Gas Temperature (°F)	500
Exit Gas Temperature (K)	533.15
Standard Condition Temperature (K)	273.15
Blackfoot Barometric Pressure (mm Hg)	645.67
Standard Condition Barometric Pressure (mm Hg)	760.00

Specific Characteristics	Natural Gas	Waste Oil
Heating Value (BTU/scf)	1,020	1,122,000
Product Consumption (scf/hr)	20,098	18
Product Consumption (gal/hr)	150,333	138.67
Fuel Density (lb/gal)	NA	7.41
Wet Standard Stack Flow Rate (wscf/min)	3,625	3,826
Dry Standard Stack Flow Rate (dscf/min)	2,975	3,140
Dry Standard Flow Rate Corrected for 3% O_2 and Altitude (dscf/min)	4,091	4,318
Fd (dscf stack gas/BTU)	0.00871	0.00919
Fw (wscf stack gas/BTU)	0.01061	0.01092
Stack Flow	8,330	8,102
Stack Velocity (m/s)	14.04	13.98
Actual Hours of Operation (hr/yr)	8,658	1,902

Fuel Composition	Natural Gas	Waste Oil
% Ash	NA	0.2
% Sulfur	NA	0.5
% Lead	NA	0.01
% Chlorine	NA	0.57
Arsenic (ppm)	NA	1
Cadmium (ppm)	NA	0.4
Chromium (ppm)	NA	0.9

Criteria Pollutants	Natural Gas Combustion				Waste Oil Combustion				Maximum	Average				
	EF[a] (lb/10^6 scf)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)	Potential Emissions (g/s)	EF[a] (lb/10^3 gal)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)	Potential Emissions (g/s)	Potential Emissions (ton/yr)	Limited Emissions (g/s)	Limited Emissions (ton/yr)	Significant Level[e] (ton/yr)	Below Regulatory Concern?[e]	Significant Contribution?[e]
PM-10 (as NG assume = PM)	7.6	1.53E-01	6.69E-01	1.92E-02	51 A	1.39E+00	6.11E+00	1.76E-01	6.11	0.053	1.86	15	no	no
SO2	0.6	1.21E-02	5.29E-02	1.52E-03	147 B	1.00E+01	4.40E+01	1.27E+00	44.00	0.278	9.80	40	no	no
NOx	100	2.01E+00	8.80E+00	2.53E-01	19	2.60E+00	1.14E+01	3.27E-01	11.37	0.269	9.36	40	no	no
CO	84	1.69E+00	7.39E+00	2.13E-01	5	6.83E-01	2.99E+00	8.61E-02	7.39	0.186	6.44	100	yes	no
VOC (assumed equal to TOC for oil)	5.5	1.11E-01	4.84E-01	1.39E-02	1	1.37E-01	5.99E-01	1.72E-02	0.60	0.016	0.51	40	yes	no
Lead	0.0005	1.00E-05	4.40E-05	1.27E-06	55 L	7.52E-02	3.29E-01	9.47E-03	0.33	0.002	0.07	0.6	no	no

Non-Criteria Pollutants with Significant Threshold	Natural Gas Combustion				Waste Oil Combustion				Maximum	Average				
	EF[a] (lb/10^6 scf)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)	Potential Emissions (g/s)	EF[a] (lb/10^3 gal)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)	Potential Emissions (g/s)	Potential Emissions (ton/yr)	Limited Emissions (g/s)	Limited Emissions (ton/yr)	Significant Level[e] (ton/yr)	Below Regulatory Concern?[e]	Significant Contribution?[e]
PM	7.6	1.53E-01	6.69E-01	1.92E-02	84 A	1.75E+00	7.64E+00	2.20E-01	7.66	0.053	2.19	25	yes	no
Beryllium	<1.2E-6	ND	ND	ND	BDL	ND	ND	ND	ND	ND	ND	0.0004	yes	no
Mercury	2.60E-04	5.23E-06	2.29E-05	6.58E-07	[redacted]	1.54E-05	6.76E-05	1.95E-06	6.76E-05	9.380E-07	3.2607E-06	0.1	yes	no

	PM Emissions (gr/min)	Grain Load (gr/dscf @3% O2)	PM Grain Standard[a] (gr/dscf)	Meets Standard?
Natural Gas	17.82	0.004	0.015	yes
Waste Oil	204.06	0.0473	0.060	yes

Other Pollutants	Natural Gas Combustion				Waste Oil Combustion				Maximum	Average		
	EF[a] (lb/10^6 scf)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)	Potential Emissions (g/s)	EF[a] (lb/10^3 gal)	Potential Emissions (lb/hr)	Potential Emissions (ton/yr)	Potential Emissions (g/s)	Potential Emissions (ton/yr)	Limited Emissions (ton/yr)	Limited Emissions (g/s)	
TOC	11	2.21E-01	9.68E-01	2.79E-02	1	1.37E-01	5.99E-01	1.72E-02	9.68E-01	0.968	2.865E-02	
HCl	NA	NA	NA	NA	98 Cl	8.04	35.47	9.78	2.95E+01	5.75E+00	1.864E-01	
Methane	2.3	4.62E-02	2.02E-01	5.82E-03	[redacted]	6.42E-02	2.81E-01	8.09E-03	2.81E-01	0.280	8.317E-03	
CO_2	120,000	2,412	10,564	304	22,000	3,007	13,169	379	13,169	11,129	3.293E+02	
H_2O	2.2	4.42E-02	1.94E-01	5.57E-03	NA	NA	NA	NA	1.94E-01	1.52E-01	4.961E-03	

Toxic Air Pollutants	Natural Gas Combustion			Waste Oil Combustion			Maximum		Average				
	EF (lb/10^6 scf)	Potential Emissions (lb/hr)	Potential Emissions (g/s)	EF (lb/10^3 gal)	Potential Emissions (lb/hr)	Potential Emissions (g/s)	Potential Emissions (ton/yr)	Potential Emissions (lb/hr)	Limited Emissions (lb/hr)	Limited Emissions (g/s)	EL[b] (lb/hr)	Modeling Required?[c]	BRC?
Arsenic[d]	2.00E-04	4.02E-06	5.06E-07	7.41E-03	1.01E-03	1.28E-04	4.44E-03	1.28E-04	2.23E-04	2.81E-05	1.50E-05	yes	no
Barium	4.40E-03	8.84E-05	1.11E-05	[redacted]	8.01E-07	7.58E-08	3.87E-04	1.11E-05	5.84E-05	6.74E-06	0.083	no	yes
Benzene	2.10E-03	4.22E-05	5.32E-06	[redacted]	2.92E-05	3.69E-06	1.85E-04	5.32E-06	3.94E-05	4.96E-06	8.00E-04	no	yes
Beryllium	<1.2E-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.80E-05	no	yes
Benzo(a)pyrene	<1.2E-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.00E-06	no	yes
Bis (2-ethylhexyl)phthalate	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	2.80E-02	no	yes
Cadmium[d]	1.10E-03	2.21E-05	2.79E-06	2.96E-03	4.05E-04	5.10E-05	1.77E-03	5.10E-05	1.05E-04	1.32E-05	3.70E-06	yes	no
Chromium[d]	1.40E-03	2.81E-05	3.55E-06	2.22E-03	3.04E-04	3.83E-05	1.33E-03	3.83E-05	8.80E-05	1.11E-05	3.30E-02	no	yes
Cobalt	8.40E-05	1.68E-06	2.13E-07	2.10E-04	2.87E-05	3.62E-06	1.26E-04	3.62E-06	7.55E-06	9.52E-07	3.30E-03	no	yes
Copper	8.50E-04	1.71E-05	2.15E-06	1.76E-03	2.41E-04	3.03E-05	1.05E-03	3.03E-05	6.68E-05	8.27E-06	3.33E-01	no	yes
Dibutylphthalate	NA	NA	NA	3.40E-05	4.68E-06	5.86E-07	2.04E-05	5.86E-07	1.01E-05	1.27E-07	6.70E-02	no	yes
Dichlorobenzene	1.20E-03	2.41E-05	3.04E-06	ND	ND	ND	1.05E-04	3.04E-06	1.89E-05	2.38E-06	2.00E+01	no	yes
Ethylbenzene	NA	NA	NA	[redacted]	8.69E-06	1.10E-06	3.81E-05	1.10E-06	1.89E-06	2.38E-07	2.90E+01	no	yes
Fluorene	2.80E-06	5.63E-08	7.09E-09	[redacted]	6.11E-07	7.70E-08	2.46E-06	7.70E-08	1.77E-07	2.23E-08	1.33E-01	no	yes
Formaldehyde	7.50E-02	1.51E-03	1.90E-04	[redacted]	4.14E-03	5.22E-04	1.81E-02	5.22E-04	2.09E-03	2.63E-04	5.10E-04	yes	no
Hexane	1.80E+00	3.62E-02	4.56E-03	[redacted]	2.46E-04	3.10E-05	1.58E-01	4.84E-03	2.84E-02	3.58E-03	1.20E+01	no	yes
Manganese	3.80E-04	7.64E-06	9.62E-07	6.90E-02	9.39E-03	1.17E-03	4.07E-02	1.17E-03	2.02E-03	2.55E-04	9.33E-01	no	yes
Mercury	2.60E-04	5.23E-06	6.58E-07	[redacted]	1.54E-05	1.95E-06	6.76E-05	1.95E-06	7.44E-06	9.38E-07	3.00E-03	no	yes
Molybdenum	1.10E-03	2.21E-05	2.79E-06	[redacted]	1.50E-07	1.89E-08	9.66E-05	2.79E-06	1.73E-05	2.18E-06	3.33E-01	no	yes
Naphthalene	6.10E-04	1.23E-05	1.54E-06	9.20E-05	1.26E-05	1.58E-06	5.81E-05	1.58E-06	1.23E-05	1.55E-06	3.33E+00	no	yes
Nickel	2.10E-03	4.22E-05	5.32E-06	1.10E-02	1.50E-03	1.89E-04	6.56E-03	1.89E-04	3.60E-04	4.53E-05	2.70E-05	yes	no
Pentane	2.60E+00	5.23E-02	6.58E-03	[redacted]	3.56E-04	4.48E-05	2.29E-01	6.58E-03	4.19E-02	5.19E-03	1.16E+02	no	yes
Phenol	NA	NA	NA	2.60E-05	3.53E-06	4.82E-07	1.58E-05	4.82E-07	9.30E-07	1.06E-07	1.27E+00	no	yes
Selenium	<2.4E-6	ND	ND	BDL	ND	ND	ND	ND	ND	ND	1.30E-02	no	yes
Toluene	3.40E-03	6.83E-05	8.61E-06	[redacted]	8.47E-04	1.07E-04	3.71E-03	1.07E-04	2.39E-04	2.99E-05	2.90E+01	no	yes
Vanadium	2.30E-03	4.62E-05	5.82E-06	[redacted]	3.14E-07	3.96E-08	2.02E-04	5.82E-06	3.83E-05	4.57E-06	3.00E-03	no	yes
o-Xylene	NA	NA	NA	[redacted]	1.40E-06	1.88E-08	6.62E-06	1.86E-06	3.23E-06	4.07E-07	2.90E+01	no	yes
Zinc	2.90E-02	5.83E-04	7.34E-05	[redacted]	3.96E-03	5.01E-04	1.74E-02	5.01E-04	1.32E-03	1.66E-04	6.67E-01	no	yes

Notes:
(a) IDAPA 58.01.01.210.05(b)
(b) IDAPA 58.01.01.576
(c) IDAPA 58.01.01.62
(d) The Emission Factors for waste oil combustion were estimated for arsenic, chromium, and cadmium based on the assumption that 100% of the metal in the liquid would be present in the combustion off-gas.
(e) Emission Factors for waste oil combustion (unless otherwise noted) are from AP-42 Chapter 1.11 "Waste Oil Combustion". Emission Factors for small boilers were use when available, otherwise values for space heaters with atomizing burners were used.
(f) Emission Factors for natural gas combustion are from AP-42 Chapter 1.4 "Natural Gas Combustion". For NOX and CO emission estimates, emission factors for an uncontrolled small boiler were selected.
(g) IDAPA 58.01.01.221.01
[redacted] IDAPA 58.01.01.585 and 586
[redacted] shaded cells represent values used by DEQ in calculations to support PTC 011-00023. Emission factors not listed in AP-42.

Combustion Source Characteristics	
Combustion Unit ID	[redacted]condary Boiler
Manufacturer	Cleaver Brooks
Model	CB400
Input Heat Capacity (BTU/hr)	16,800,000
Stack Height (ft)	26.67
Stack Height (m)	8.13
Stack Diameter (ft)	1.96
Stack Diameter (m)	0.597
Exit Gas Temperature (°F)	500
Exit Gas Temperature (K)	533.15
Standard Condition Temperature (K)	273.15
Blackfoot Barometric Pressure (mm Hg)	645.67
Standard Condition Barometric Pressure (mm Hg)	760.00

Fuel Specific Characteristics	Natural Gas
Heating Value (BTU/scf)	1,020
Product Consumption (scf/hr)	16,471
Wet Standard Stack Flow Rate (wscf/min)	2,971
Dry Standard Stack Flow Rate (dscf/min)	2,439
DSCF Corrected for 3% O_2 and Altitude (dscf/min)	3,352
Fd (dscf stack gas/BTU)	0.00871
Fw (wscf stack gas/BTU)	0.01061
Wet Actual Stack Flow Rate (wacf/min)	6,826
Stack Velocity (m/s)	11.51
Actual Hours of Operation (hr/yr)	8,760

Criteria Pollutants	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)	Significant Level[c] (ton/yr)	Below Regulatory Concern?[d]	Significant Contribution?[e]
PM-10 (assume = PM)	7.6	1.25E-01	5.48E-01	1.58E-02	15	yes	no
SO2	0.6	9.88E-03	4.33E-02	1.25E-03	40	yes	no
NOx	100	1.65E+00	7.21E+00	2.08E-01	40	no	no
CO	84	1.38E+00	6.06E+00	1.74E-01	100	yes	no
VOC	5.5	9.06E-02	3.97E-01	1.14E-02	40	yes	no
Lead	0.0005	8.24E-06	3.61E-05	1.04E-06	0.6	yes	no

Non-Criteria Pollutants with Significant Threshold	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)	Significant Level[c] (ton/yr)	Below Regulatory Concern?[d]	Significant Contribution?[e]
PM	7.6	1.25E-01	5.48E-01	1.58E-02	25	yes	no
Beryllium	<1.2E-5	ND	ND	ND	0.0004	yes	no
Mercury	2.60E-04	4.28E-06	1.88E-05	5.40E-07	0.1	yes	no

PM Grain Loading Standard	PM Emissions (gr/min)	Grain Load (gr/dscf @3% O2)	PM Grain Standard[b] (gr/dscf)	Meets Standard?
Natural Gas	14.60	0.004	0.018	yes

Other Pollutants	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)
TOC	11	1.81E-01	7.94E-01	2.28E-02
HCl	NA	NA	NA	NA
Methane	2.3	3.79E-02	1.66E-01	4.77E-03
CO_2	120,000	1,976	8,657	249
N_2O	2.2	3.62E-02	1.59E-01	4.57E-03

Toxic Air Pollutants	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)	EL[f] (lb/hr)	Modeling Required?[a]	BRC?
Arsenic	2.00E-04	3.29E-06	1.44E-05	4.15E-07	1.50E-06	yes	no
Barium	4.40E-03	7.25E-05	3.17E-04	9.13E-06	0.033	no	yes
Benzene	2.10E-03	3.46E-05	1.51E-04	4.36E-06	8.00E-04	no	yes
Beryllium	<1.2E-5	ND	ND	ND	2.80E-05	no	yes
Benzo(a)pyrene	<1.2E-6	ND	ND	ND	2.00E-06	no	yes
Bis (2-ethylhexyl)phthalate	NA	NA	NA	NA	2.80E-02	no	yes
Cadmium	1.10E-03	1.81E-05	7.94E-05	2.28E-06	3.70E-06	yes	no
Chromium	1.40E-03	2.31E-05	1.01E-04	2.91E-06	3.30E-02	no	yes
Cobalt	8.40E-05	1.38E-06	6.06E-06	1.74E-07	3.30E-03	no	yes
Copper	8.50E-04	1.40E-05	6.13E-05	1.76E-06	3.33E-01	no	yes
Dibutylphthalate	NA	NA	NA	NA	6.70E-02	no	yes
Dichlorobenzene	1.20E-03	1.98E-05	8.66E-05	2.49E-06	2.00E+01	no	yes
Ethylbenzene	NA	NA	NA	NA	2.90E+01	no	yes
Fluorene	2.80E-06	4.61E-08	2.02E-07	5.81E-09	1.33E-01	no	yes
Formaldehyde	7.50E-02	1.24E-03	5.41E-03	1.56E-04	5.10E-04	yes	no
Hexane	1.80E+00	2.96E-02	1.30E-01	3.74E-03	1.20E+01	no	yes
Manganese	3.80E-04	6.26E-06	2.74E-05	7.89E-07	3.33E-01	no	yes
Mercury	2.60E-04	4.28E-06	1.88E-05	5.40E-07	3.00E-03	no	yes
Molybdenum	1.10E-03	1.81E-05	7.94E-05	2.28E-06	3.33E-01	no	yes
Napthalene	6.10E-04	1.00E-05	4.40E-05	1.27E-06	3.33E+00	no	yes
Nickel	2.10E-03	3.46E-05	1.51E-04	4.36E-06	2.70E-05	yes	no
Pentane	2.60E+00	4.28E-02	1.88E-01	5.40E-03	1.18E+02	no	yes
Phenol	NA	NA	NA	NA	1.27E+00	no	yes
Selenium	<2.4E-5	ND	ND	ND	1.30E-02	no	yes
Toluene	3.40E-03	5.60E-05	2.45E-04	7.06E-06	2.50E+01	no	yes
Vanadium	2.30E-03	3.79E-05	1.66E-04	4.77E-06	3.00E-03	no	yes
o-Xylene	NA	NA	NA	NA	2.90E+01	no	yes
Zinc	2.90E-02	4.78E-04	2.09E-03	6.02E-05	6.67E-01	no	yes

Notes:
(a) IDAPA 58.01.01.210.05(b)
(b) IDAPA 58.01.01.676
(c) IDAPA 58.01.01.006.92
(d) IDAPA 58.01.01.221.01
(e) Emission Factors for natural gas combustion are from AP-42 Chapter 1.4 "Natural Gas Combustion". For NOX and CO emission estimates, emission factors for an uncontrolled small boiler was selected.
(f) IDAPA 58.01.01.585 and 586

Combustion Source Characteristics	
Combustion Unit ID	Primary Hot Oil Heater
Manufacturer	CEI Enterprises
Model	CEI-5000G
Input Heat Capacity (BTU/hr)	7,300,000
Stack Height (ft)	10.08
Stack Height (m)	3.07
Stack Diameter (ft)	1.33
Stack Diameter (m)	0.407
Exit Gas Temperature (°F)	600
Exit Gas Temperature (K)	588.71
Standard Condition Temperature (K)	273.15
Blackfoot Barometric Pressure (mm Hg)	645.57
Standard Condition Barometric Pressure (mm Hg)	760.00

Fuel Specific Characteristics	Natural Gas
Heating Value (BTU/scf)	1,020
Product Consumption (scf/hr)	7,157
Wet Standard Stack Flow Rate (wscf/min)	1,291
Dry Standard Stack Flow Rate (dscf/min)	1,060
DSCF Corrected for 3% O_2 and Altitude (dscf/min)	1,457
Fd (dscf stack gas/BTU)	0.00871
Fw (wscf stack gas/BTU)	0.01061
Wet Actual Stack Flow Rate (wacf/min)	3,275
Stack Velocity (m/s)	11.91
Actual Hours of Operation (hr/yr)	8,760

Criteria Pollutants	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)	Significant Level [b] (ton/yr)	Below Regulatory Concern?[c]	Significant Contribution? [b]
PM-10 (assume = PM)	7.6	5.44E-02	2.38E-01	6.85E-03	15	yes	no
SO2	0.6	4.29E-03	1.88E-02	5.41E-04	40	yes	no
NOx	100	7.16E-01	3.13E+00	9.02E-02	40	yes	no
CO	84	6.01E-01	2.63E+00	7.57E-02	100	yes	no
VOC	5.5	3.94E-02	1.72E-01	4.96E-03	40	yes	no
Lead	0.0005	3.58E-06	1.57E-05	4.51E-07	0.6	yes	no

Non-Criteria Pollutants with Significant Threshold	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)	Significant Level [c] (ton/yr)	Below Regulatory Concern?[d]	Significant Contribution? [c]
PM	7.6	5.44E-02	2.38E-01	6.85E-03	25	yes	no
Beryllium	<1.2E-6	ND	ND	ND	0.0004	yes	no
Mercury	2.60E-04	1.86E-06	8.15E-06	2.34E-07	0.1	yes	no

PM Grain Loading Standard	PM Emissions (gr/min)	Grain Load (gr/dscf @3% O2)	PM Grain Standard [b] (gr/dscf)	Meets Standard?
Natural Gas	6.34	0.004	0.015	yes

Other Pollutants	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)
TOC	11	7.87E-02	3.45E-01	9.92E-03
HCl	NA	NA	NA	NA
Methane	2.3	1.65E-02	7.21E-02	2.07E-03
CO_2	120,000	859	3,762	108
N_2O	2.2	1.57E-02	6.90E-02	1.98E-03

Toxic Air Pollutants	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)	EL[f] (lb/hr)	Modeling Required?[e]	BRC?
Arsenic	2.00E-04	1.43E-06	6.27E-06	1.80E-07	1.50E-06	no	no
Barium	4.40E-03	3.15E-05	1.38E-04	3.97E-06	0.033	no	yes
Benzene	2.10E-03	1.50E-05	6.58E-05	1.89E-06	8.00E-04	no	yes
Beryllium	<1.2E-6	ND	ND	ND	2.80E-05	no	yes
Benzo(a)pyrene	<1.2E-6	ND	ND	ND	2.00E-06	no	yes
Bis (2-ethylhexyl)phthalate	NA	NA	NA	NA	2.80E-02	no	yes
Cadmium	1.10E-03	7.87E-06	3.45E-05	9.92E-07	3.70E-06	yes	no
Chromium	1.40E-03	1.00E-05	4.39E-05	1.26E-06	3.30E-02	no	yes
Cobalt	8.40E-05	6.01E-07	2.63E-06	7.57E-08	3.30E-03	no	yes
Copper	8.50E-04	6.08E-06	2.66E-05	7.67E-07	3.33E-01	no	yes
Dibutylphthalate	NA	NA	NA	NA	6.70E-02	no	yes
Dichlorobenzene	1.20E-03	8.59E-06	3.76E-05	1.08E-06	2.00E+01	no	yes
Ethylbenzene	NA	NA	NA	NA	2.90E+01	no	yes
Fluorene	2.80E-06	2.00E-08	8.78E-08	2.52E-09	1.33E-01	no	yes
Formaldehyde	7.50E-02	5.37E-04	2.35E-03	6.76E-05	5.10E-04	yes	no
Hexane	1.80E+00	1.29E-02	5.64E-02	1.62E-03	1.20E+01	no	yes
Manganese	3.80E-04	2.72E-06	1.19E-05	3.43E-07	3.33E-01	no	yes
Mercury	2.60E-04	1.86E-06	8.15E-06	2.34E-07	3.00E-03	no	yes
Molybdenum	1.10E-03	7.87E-06	3.45E-05	9.92E-07	3.33E-01	no	yes
Napthalene	6.10E-04	4.37E-06	1.91E-05	5.50E-07	3.33E+00	no	yes
Nickel	2.10E-03	1.50E-05	6.58E-05	1.89E-06	2.70E-05	no	no
Pentane	2.60E+00	1.86E-02	8.15E-02	2.34E-03	1.16E+02	no	yes
Phenol	NA	NA	NA	NA	1.27E+00	no	yes
Selenium	<2.4E-5	ND	ND	ND	1.30E-02	no	yes
Toluene	3.40E-03	2.43E-05	1.07E-04	3.07E-06	2.50E+01	no	yes
Vanadium	2.30E-03	1.65E-05	7.21E-05	2.07E-06	3.00E-03	no	yes
o-Xylene	NA	NA	NA	NA	2.90E+01	no	yes
Zinc	2.90E-02	2.08E-04	9.09E-04	2.62E-05	6.67E-01	no	yes

Notes:
(a) IDAPA 58.01.01.210.05(b)
(b) IDAPA 58.01.01.676
(c) IDAPA 58.01.01.006.92
(d) IDAPA 58.01.01.221.01
(e) Emission Factors for natural gas combustion are from AP-42 Chapter 1.4 "Natural Gas Combustion". For NOX and CO emission estimates, emission factors for an uncontrolled small boiler was selected.
(f) IDAPA 58.01.01.585 and 586

Combustion Source Characteristics	
Stack Diameter (ft)	1.00
Stack Diameter (m)	0.305
Exit Gas Temperature (°F)	520
Exit Gas Temperature (K)	544.26
Standard Condition Temperature (K)	273.15
Blackfoot Barometric Pressure (mm Hg)	645.57
Standard Condition Barometric Pressure (mm Hg)	760.00

Fuel Specific Characteristics	Natural Gas
FW (Wet Stack gases) (D)	0.01051
Wet Actual Stack Flow Rate (wact/min)	1,755
Stack Velocity (m/s)	11.34
Actual Hours of Operation (hr/yr)	8760

Criteria Pollutants	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)	Significant Level [b] (ton/yr)	Below Regulatory Concern?[d]	Significant Contribution? [c]
PM-10 (assume = PM)	7.6	3.15E-02	1.38E-01	3.97E-03	15	yes	no
SO2	0.6	2.49E-03	1.09E-02	3.14E-04	40	yes	no
NOx	100	4.15E-01	1.82E+00	5.23E-02	40	yes	no
CO	84	3.48E-01	1.53E+00	4.39E-02	100	yes	no
VOC	5.5	2.28E-02	9.99E-02	2.87E-03	40	yes	no
Lead	0.0005	2.07E-06	9.06E-06	2.61E-07	0.6	yes	no

Non-Criteria Pollutants with Significant Threshold	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)	Significant Level [b] (ton/yr)	Below Regulatory Concern?[d]	Significant Contribution? [c]
PM	7.6	3.15E-02	1.38E-01	3.97E-03	25	yes	no
Beryllium	<1.2E-5	ND	ND	ND	0.0004	yes	no
Mercury	2.60E-04	1.08E-06	4.72E-06	1.36E-07	0.1	yes	no

PM Grain Loading Standard	PM Emissions (gr/min)	Grain Load (gr/dscf @3% O2)	PM Grain Standard [b] (gr/dscf)	Meets Standard?
Natural Gas	3.68	0.004	0.015	yes

Other Pollutants	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)
TOC	11	4.56E-02	2.00E-01	5.75E-03
HCl	NA	NA	NA	NA
Methane	2.3	9.54E-03	4.18E-02	1.20E-03
CO_2	120,000	498	2,180	63
N_2O	2.2	9.12E-03	4.00E-02	1.15E-03

Toxic Air Pollutants	EF[a] (lb/10^6 scf)	Emissions (lb/hr)	Emissions (ton/yr)	Emissions (g/s)	EL[f] (lb/hr)	Modeling Required?[e]	BRC?
Arsenic	2.00E-04	8.29E-07	3.63E-06	1.05E-07	1.50E-06	no	no
Barium	4.40E-03	1.82E-05	7.99E-05	2.30E-06	0.033	no	yes
Benzene	2.10E-03	8.71E-06	3.81E-05	1.10E-06	8.00E-04	no	yes
Beryllium	<1.2E-5	ND	ND	ND	2.80E-05	no	yes
Benzo(a)pyrene	<1.2E-6	ND	ND	ND	2.00E-06	no	yes
Bis (2-ethylhexyl)phthalate	NA	NA	NA	NA	2.80E-02	no	yes
Cadmium	1.10E-03	4.56E-06	2.00E-05	5.75E-07	3.70E-06	yes	no
Chromium	1.40E-03	5.81E-06	2.54E-05	7.32E-07	3.30E-02	no	yes
Cobalt	8.40E-05	3.48E-07	1.53E-06	4.39E-08	3.30E-03	no	yes
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dibutylphthalate	NA	NA	NA	NA	6.70E-02	no	yes
Dichlorobenzene	1.20E-03	4.96E-06	2.18E-05	6.27E-07	2.00E+01	no	yes
Ethylbenzene	NA	NA	NA	NA	2.90E+01	no	yes
Fluorene	2.80E-06	1.16E-08	5.09E-08	1.46E-09	1.33E-01	no	yes
Formaldehyde	7.50E-02	3.11E-04	1.36E-03	3.92E-05	5.10E-04	no	no
Hexane	1.80E+00	7.46E-03	3.27E-02	9.41E-04	1.20E+01	no	yes
Manganese	3.80E-04	1.58E-06	6.90E-06	1.99E-07	3.33E-01	no	yes
Mercury	2.60E-04	1.08E-06	4.72E-06	1.36E-07	3.00E-03	no	yes
Molybdenum	1.10E-03	4.56E-06	2.00E-05	5.75E-07	3.33E-01	no	yes
Napthalene	6.10E-04	2.53E-06	1.11E-05	3.19E-07	3.33E+00	no	yes
Nickel	2.10E-03	8.71E-06	3.81E-05	1.10E-06	2.70E-05	no	no
Pentane	2.60E+00	1.08E-02	4.72E-02	1.36E-03	1.18E+02	no	yes
Phenol	NA	NA	NA	NA	1.27E+00	no	yes
Selenium	<2.4E-5	ND	ND	ND	1.30E-02	no	yes
Toluene	3.40E-03	1.41E-05	6.18E-05	1.78E-06	2.50E+01	no	yes
Vanadium	2.30E-03	9.54E-06	4.18E-05	1.20E-06	3.00E-03	no	yes
o-Xylene	NA	NA	NA	NA	2.90E+01	no	yes
Zinc	2.90E-02	1.20E-04	5.27E-04	1.52E-05	6.67E-01	no	yes

Notes:

(a) IDAPA 58.01.01.210.05(b)

(b) IDAPA 58.01.01.676

(c) IDAPA 58.01.01.006.92

(d) IDAPA 58.01.01.221.01

(e) Emission Factors for natural gas combustion are from AP-42 Chapter 1.4 "Natural Gas Combustion". For NOX and CO emission estimates, emission factors for an uncontrolled small boiler was selected.

(f) IDAPA 58.01.01.585 and 586

ATTACHMENT F

Boiler CB500 Potential Emissions

Estimates for Pollutants of Concern

Operation

1902 hours per year recycled waste oil emission;
8760 hours per year natural gas usage, if recycled waste oil is combusted for 0 hours per year.
6858 hours per year natural gas usage, if recycled waste oil is combusted for 1,902 hours per year.

Rationale:
Allowable hourly emissions rates must be at least equal to worst-case emission rate.
For some pollutants, recycled waste oil combustion creates greater emissions than natural gas combustion.
For other pollutants, the reverse is true.

For pollutants with greater hourly emissions rates from combusting recycled waste oil, hourly potential emissions are based on recycled oil emissions.
The annual potential emissions are based on 1,902 hr/yr combustion of recycled waste oil, and 6,858 hr/yr of natural gas combustion.

For pollutants with greater hourly emissions from combusting natural gas, both potential hourly and annual emissions are based on emission estimates for natural gas combustion only. Recycled waste oil emissions rates are lesser, and are subsumed within the worst-case natural gas emission rates.

Pollutant	Potential Hourly Natural Gas Emissions (lb/hr)	Potential Hourly Recycled Waste Oil Emissions (lb/hr)	Annual Natural Gas Emission Rate (T/yr)	Annual Recycled Waste Oil Emission Rate (T/yr)	Annual Potential to Emit (T/yr)	Hourly Potential Emission Rate (lb/hr)
Criterias						
PM	0.153	1.750	0.525	1.664	2.189	1.75
PM-10	0.153	1.39	0.525	1.322	1.847	1.39
SO2	1.21E-02	10	0.041	9.510	9.551	10
NOx	2.01	2.6	6.892	2.473	9.365	2.6
CO	1.69	0.683	7.4022	NA	7.4022	1.69
VOCs	0.111	0.137	0.381	0.130	0.511	0.137
Lead	1.00E-05	0.0752	3.43E-05	0.072	0.072	0.0752
TAPs (in pounds/year)			(lb/yr)	(lb/yr)	(lb/yr)	
Hydrogen Chloride	0	6.04	0.00E+00	11488	11488	6.04
Arsenic	4.02E-06	1.01E-03	2.76E-02	1.92	1.95	1.01E-03
Benzene	4.22E-05	2.92E-05	0.37	NA	0.37	4.22E-05
Cadmium	2.21E-05	4.05E-04	0.15	0.77	0.92	4.05E-04
Formaldehyde	1.51E-03	4.14E-03	10.36	7.87	18.23	4.14E-03
Nickel	4.22E-05	1.50E-03	0.29	2.85	3.14	1.50E-03

APPENDIX B

Air Dispersion Modeling
Technical Memorandum
October 14, 2003

MEMORANDUM

TO: Carole Zundel, Permit Writer, Air Program Office

FROM: Mary Anderson, Modeling Coordinator, Air Program Office

SUBJECT: Modeling Review for the PTC/Tier II Application for the Idaho Asphalt Facility in Blackfoot, Idaho

DATE: October 14, 2003

1.0 SUMMARY:

Idaho Asphalt submitted a modeling analysis in support of a PTC/Tier II application for their facility in Blackfoot, Idaho. All sources were included in the modeling analysis. Facility-wide analysis included the following pollutants: PM_{10}, NO_2, CO, SO_2, benzene, formaldehyde, arsenic, cadmium, nickel, and HCl. Because of confidential business information, the facility submitted an alternative modeling analysis that used alternative tank dimensions as structures. These structures were used for downwash purposes for determining ambient concentrations. The facility also submitted, under the label of confidential business information, a modeling analysis using the actual tank dimensions/locations. Both modeling analyses were reviewed. Only the buildings were different between the two modeling analyses. In the actual model, DEQ included tank 75. This was accidentally omitted from the file submitted by the facility. The results presented in this memo are the final results, with this correction. The input files for the alternative scenarios for benzene and formaldehyde would not run in ISCST3Prime on DEQ's computer. It was determined that ISCST3 would be appropriate to use, as a guideline model. Therefore, these pollutants were rerun using ISCST3 for both the actual and alternative models. No other changes were made by DEQ to the alternative and actual models.

The facility assumed that the worst case scenario for benzene emissions from the asphalt cement tanks (except #320-1 and 2320-1) was for these emissions to be routed through the biofilters. No control efficiency was assumed for the biofilters.

The demonstration of compliance is based on the alternative modeling analysis. Therefore, the alternative model results must be equal to or greater than the actual model results. Based on these results, the facility has demonstrated compliance with the national ambient air quality standards and toxic air pollutant increments

2.0 DISCUSSION:

2.1 Applicable Air Quality Impact Limits

This facility is located in Bingham County, designated as attainment or unclassified for SO_2, NO_2, CO, and PM_{10}. Table 1 presents the applicable regulatory limits for this analysis.

Table 1. Applicable regulatory limits

Pollutant	Averaging Period	Significant Contribution Levels ($\mu g/m^3$)[a, b]	Regulatory Limit ($\mu g/m^3$)[c]	Modeled Value Used[d]
PM_{10}[e]	Annual	1	50[f]	Maximum 1st highest[g]
	24-hour	5	150[h]	Maximum 6th highest[i]
CO	8-hour	500	10,000[j]	Highest 2nd highest[g]
	1-hour	2000	40,000[j]	Highest 2nd highest[g]
SO_2	Annual	1	80[j]	Maximum 1st highest[g]
	24-hour	5	365[j]	Highest 2nd highest[g]
	3-hour	25	1,300[j]	Highest 2nd highest[g]
NO_2	Annual	1	100[f]	Maximum 1st highest[g]
Benzene	Annual	N/A	1.2E-01	Maximum 1st highest[g]
Formaldehyde	Annual	N/A	7.7E-02	Maximum 1st highest[g]
Arsenic	Annual	N/A	2.3E-04	Maximum 1st highest[g]
Cadmium	Annual	N/A	5.6E-04	Maximum 1st highest[g]
Nickel	Annual	N/A	4.2E-04	Maximum 1st highest[g]
HCl	24-hour	N/A	3.75E+02	Maximum 1st highest[g]

a. IDAPA 58.01.01.006.93
b. Micrograms per cubic meter
c. IDAPA 58.01.01.577 for criteria pollutants, IDAPA 58.01.01.585 for non-carcinogenic toxic air pollutants IDAPA 58.01.01.586 for carcinogenic toxic air pollutants.
d. The maximum 1st highest modeled value is always used for significant impact analysis and for all toxic air pollutants.
e. Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
f. Never expected to be exceeded in any calendar year.
g. Concentration at any modeled receptor.
h. Never expected to be exceeded more than once in any calendar year.
i. Concentration at any modeled receptor when using five years of meteorological data.
j. Not to be exceeded more than once per year.

2.2 Background Concentrations

There are no site specific monitoring data available for the area surrounding this facility. Therefore, the Department recommended the use of general statewide values for rural agricultural areas.

Table 2. Background concentrations.

Pollutant	Averaging Period	Background concentrations ($\mu g/m^3$)[a]
PM10	24-hour	73
	Annual	26
CO	1-hour	3,300
	8-hour	2,600
SO_2	3-hour	33
	24-hour	26
	Annual	7.3
NO_2	Annual	17

a. Micrograms per cubic meter.

2.3 Modeling Impact Assessment

Idaho Asphalt submitted the modeling analysis for this permit application. MSE, Inc performed the modeling for the facility.

2.3.1 Modeling protocol

A modeling protocol was not submitted prior to the application.

2.3.2 Model Selection

MSE submitted the worst case model for each pollutant. Therefore, MSE used ISCST3 prime for benzene and formaldehyde and ISCST3 for all other pollutants for both the actual and alternative models. However, DEQ could not rerun benzene and formaldehyde files using ISCST3 Prime. After reviewing the facility, it was determined that ISCST3 would be appropriate for all pollutants. Therefore, DEQ reran benzene and formaldehyde using ISCST3.

2.3.3 Land Use Classification

MSE used the rural landuse classification for both the actual and alternative models. DEQ agrees with the decision.

2.3.4 Meteorological Data

MSE used Pocatello surface and Boise upper air data for 1987 – 1991 for both the actual and alternative models. DEQ has determined that is the most representative data that is currently available.

2.3.5 Complex Terrain

MSE did not account for complex terrain for both the actual and alternative models. DEQ agrees with this. The area surrounding the facility is essentially flat terrain.

2.3.6 Facility Layout

The actual model was verified using the actual facility plot plan submitted under CBI. The alternative model was verified by using the alternative facility plot plan submitted with the application. The only difference between the two models was the tank (building structure) size and location. The ambient air boundary and stack locations were identical in the two models.

2.3.7 Building Downwash

Building downwash was included. This was the only difference between the actual model and the alternative model. The actual model used the actual tank dimensions and locations. However, the facility claimed this information to be CBI. Therefore, the facility submitted the alternative model using "worst-case" tank dimensions for downwash purposes.

2.3.8 Ambient Air Boundary

The ambient air boundary was determined to be the property boundary for both the actual and alternative models. The property boundary is completely fenced. DEQ agrees with this assumption.

2.3.9 *Receptor Network*

MSE used receptor spacing of 25-50 meters along the ambient air boundary and approximately 100 meter spacing throughout the evaluated area. DEQ determined these receptor grids adequately accounted for the maximum concentration.

2.3.10 *Emission Rates*

Table 3 presents the emission rates for the fuel burning equipment. These emission rates were used in both the actual and alternative models. The emission rates (for both the actual and alternative models) for benzene and formaldehyde are in the September 29, 2003 submittal from MSE.

Table 3. Emission rates for fuel burning equipment (g/s).

Pollutant	CB500	CB400	CEI-5000G	CEI-3000
CO	.213[a]	.174	7.57E-02	4.39E-02
PM_{10} – 24 hour	.176[b]	1.8E-02	6.85E-03	3.97E-03
Annual	5.32E-02[c]	1.8E-02	6.85E-03	3.97E-03
NO_2 – annual	.3276[a]	.208	9.02E-02	5.23E-02
SO_2 – 3,24 hour	1.27[b]	1.25E-03	5.41E-04	3.14E-04
annual	.276[c]	1.25E-03	5.41E-04	3.14E-04
Arsenic	2.81E-05[c]	4.15E-07	1.80E-07	1.05E-07
Cadmium	1.33E-05[c]	2.28E-06	9.92E-07	5.75E-07
Nickel	4.53E-05[c]	4.36E-06	1.89E-06	1.10E-06
Benzene	5.32E-06[c]	4.36E-06	1.89E-06	1.10E-06
Formaldehyde	2.62E-04[c]	1.56E-04	6.76E-05	3.92E-05
HCl	0.76[b]	N/A	N/A	N/A

a. Based on 100% usage of natural gas, worst case CO.
b. Based on 100% usage of recycled waste oil, worst case PM_{10}, SO_2, NO_2, and HCl.
c. Based on 260,000 gallons of recycled waste oil (April 2001 PTC limit) and remainder of year on natural gas.

2.3.11 *Emission Release Parameters*

The emission release parameters are presented in the application material. They are not repeated here.

3.0 MODELING RESULTS:

Tables 4 and 5 present the full impact analysis and toxic air pollutant analysis results, respectively. The demonstration of compliance is based on the alternative modeling analysis. Therefore, the alternative model results must be equal to or greater than the actual model results. Based on these results, the facility has demonstrated compliance with all regulatory ambient air quality standards.

Table 4. Full impact analysis results.

Pollutant	Averaging Period	Actual Model Results µg/m³	Alternative Model Results µg/m³	Background Concentration µg/m³	Total Ambient Impact µg/m³	Regulatory Limit µg/m³	Demonstrates Compliance?
PM_{10}	24-hour	12.3	24.3	73	97.3	150	Y
	Annual	3.44	4.13	26	30.13	50	Y
CO	1-hour	470	522	3,300	3822	40000	Y
	8-hour	163	191	2,600	2791	10000	Y
SO_2	3-hour	198	486	33	519	1300	Y
	24-hour	71	161	26	187	365	Y
	Annual	2.06	8.29	7.3	15.59	80	Y
NO_2	Annual	43	47	17	64	100	Y

Table 5. Toxic air pollutants impact analysis.

Pollutant	Averaging Period	Actual Model Results µg/m³	Alternative Model Results µg/m³	Regulatory Limit µg/m³	Demonstrates Compliance?
Arsenic	Annual	2.3E-04	2.3E-04	2.3E-04	Y
Cadmium	Annual	5.2E-04	5.3E-04	5.6E-04	Y
Nickel	Annual	1.1E-03	1.3E-03	4.2E-03	Y
Benzene	Annual	7.4E-02	7.5E-02	1.2E-01	Y
Formaldehyde	Annual	5.6E-02	6.6E-02	7.7E-02	Y
HCl	24-hour	4.81E+01	1.05E+02	3.75E+02	Y

APPENDIX E

Response to Comments

December 16, 2003

STATE OF IDAHO
DEPARTMENT OF ENVIRONMENTAL QUALITY
RESPONSE TO PUBLIC COMMENTS
ON THE PROPOSED PERMIT TO CONSTRUCT FOR THE
IDAHO ASPHALT SUPPLY, INC., IDAHO FALLS, IDAHO

Introduction

As required by IDAPA 58.01.01.404 of the *Rules for the Control of Air Pollution in Idaho* (*Rules*), the Idaho Department of Environmental Quality (DEQ) provided for public notice and comment on the proposed permit to construct/Tier II operating permit for the Idaho Asphalt Supply, Inc. located in Idaho Falls, Idaho. Public comment packages, which included the application materials, the permit, and associated technical memoranda, were made available for public review at the Blackfoot Public Library, and the DEQ's State Office in Boise and Regional Office in Idaho Falls. The public comment period was provided from November 6, 2003 through December 8, 2003. Written comments were received. Those comments regarding the air quality aspects of the permit are paraphrased below with DEQ's response immediately following.

Public Comments and DEQ Responses

Responses to the comments received from Idaho Asphalt Supply on December 8, 2003 are provided below:

General

Comments that request that information that is not in the original application or in supplements to the application sent in during the proposed permit preparation period are considered a change of scope and require a separate permit action. The reason for this is that any additional information to the permit application, if considered, will require another public comment period to allow the public to view the additional information and a technical and regulatory review of the additional information that is requested to be considered.

Comment 1: **Regulated Sources**
Section 1.3

Tank ID: 49, 50

We request the following change:

Product Stored: Asphalt emulsion (fuel content) or Asphalt emulsion (water content)
Throughput: 1,259,177 gallons/year (fuel content) or 2,631,374 gallons/yr (water content)
Tank Capacity: 100,402 gallons
Tank Diameter: 18.80 ft
Tank Height: 48.34 ft
Storage Temperature: 150 °F (fuel content) or 200 °F (water content)

The basis for this request is that tanks 49 and 50 can be used to store either emulsion with fuel content or with water content. Historically these tanks have been used for storage of emulsion with fuel content; if market demand for this product is not present then these tanks would be used for storage of emulsion with water content. Permit emission calculations were based on emulsion with fuel content and were therefore worst-case.

Response to 1: This proposed modification requires additional technical analysis and review and is a change of scope from the application on which this permit is based. In order to be considered, this change must be proposed in a new permit application which includes the information specified in IDAPA 58.01.01.202.

Comment 2: **Tank ID: 28**

After further review, we realize that the maximum throughput of #2 diesel fuel established for Tank 28 will make it difficult to operate. Our main concern is that we cannot economically purchase 1,809 gallons of fuel. Our fuel deliveries are in quantities of entire tanker trucks (10,000 gallons). Although we used the same calculation procedure that was used to determine the maximum throughput of other products, it appears that the low historical use of this product may be too restrictive for future activities. We request that you increase the allowed annual throughput to 20,000 gallons. To support this increase the emissions were recalculated for tank 28 using TANKS with the revised throughput of 20,000 gallons. See Attachment A for the revised TANKS output. Benzene emissions did not increase with the revised product throughput although VOC emissions increased from 5.6 to 6.6 pounds per year. Since benzene emissions did not change as result of this throughput increase, revised air dispersion modeling is not necessary. We consider this to be a minor change to our original application and expect that it can be incorporated into the proposed permit.

Response to 2: This proposed modification requires additional technical analysis and review and is a change of scope from the application on which this permit is based. In order to be considered, this change must be proposed in a new permit application which includes the information specified in IDAPA 58.01.01.202.

Comment 3: **Loading Rack #1 through Loading Rack #4**

To reconcile the emission unit numbers listed in the permit with our current equipment labels we request the following changes to the permit:
Change Loading Rack #1 to Loading Rack #2
Change Loading Rack #2 to Loading Rack #1
Change Loading Rack #3 to Loading Rack #4
Change Loading Rack #4 to Loading Rack #3

The above changes should be carried through the rest of the permit, including: Section 4.3, Table 4.1, Table 4.2, and Table 5.1.

Response to 3: The original application and all supporting documents, including technical memorandums, for this permit, have the original loading rack numbers. Changing these numbers would be confusing for anyone reviewing the application and permit documents. Because there are many other items in this permit that will require a new permit application in order to be changed, the new permit application can include the new numbering system, along with a site map showing the most current numbering configuration. In addition, a permit condition will be written which requires that each loading rack and tank be painted with the identification number written in the permit application.

Comment 4: **Table 1.2 Other Air Pollution Sources**

Add "Natural Gas Space Heaters in Shop and Boiler Room" to the list of air pollution emitting sources that do not require specific conditions to demonstrate compliance. These emission sources were unintentionally excluded in the original permit application documents. The rated capacity for

the space heater in the shop is 107,900 Btu/hr and the rated capacity for the space heater in the boiler room 124,500 Btu/hr. Both heaters have heat input capacity significantly less than 50 million Btu/hr, the maximum heat input capacity allowed for exemption from permit to construct requirements for indirect heating. Consistent with historical IDEQ permitting practices, these sources should be listed as air polluting emission sources that do not require specific conditions to demonstrate compliance.

Response to 4: This proposed modification requires additional technical analysis and review and is a change of scope from the application on which this permit is based. In order to be considered, this change must be proposed in a new permit application which includes the information specified in IDAPA 58.01.01.202.

Comment 5: **Facility wide conditions**
Section 2.16 and 2.17 - Sulfur Content

Delete Section 2.16 and 2.17 since these permit conditions are not applicable to the site. Refer to Section 6.11, page 10 of the October 17, 2003 IDEQ Air Quality Permitting Statement of Basis which confirms residual oil is not combusted at the facility.

Response to 5: The addition of another permit requirement has caused some of the permit conditions to be renumbered . Permit Conditions 2.16 and 2.17 have been renumbered to 2.17 and 2.18 in the final permit.

Tanks No. 25 and 27 have No. 1 diesel throughputs and Tank No. 28 has No. 2 diesel throughput. Permit Condition 2.17 states, "No person shall sell, distribute, use, or make available for use any distillate fuel oil containing more than the following percentages of sulfur:

- ASTM Grade 1 fuel oil – 0.3% by weight.
- ASTM Grade 2 fuel oil – 0.5% by weight.
- Residual fuel oil (ASTM Grades 4, 5, and 6) – 1.75% by weight."

No explanation was made in the comment demonstrating that the distillate oils in Tanks No. 25, 27, and 28 are not sold, distributed, used, or made available for use. Accordingly, the first two bullets are applicable to the facility and will remain i the permit. The Department concurs that residual fuel oil (ASTM Grades 4, 5, or 6) are not identified in the permit application. Accordingly, this bullet item will be removed from the permit condition.

Permit Condition 2.18 states, "The permittee shall maintain documentation of supplier verification of distillate fuel oil sulfur content on an as-received basis."

This applies to the fuel oil in Tanks No. 25, 27, and 28.

Comment 6: **CB500 Boiler, CB400 Boiler, CEI-3000 Hot Oil Heater, and CEI-5000G Hot Oil Heater**

Section 3.7 and 3.20 – Natural Gas Throughput Limits

Delete the natural gas throughput limits contained in Section 3.7 and the natural gas throughput monitoring requirement contained in Section 3.20. The basis for this request is the following:

1. **Air dispersion modeling accepted by the IDEQ considered the maximum potential to emit for the natural gas combustion equipment. The modeling analysis demonstrated that the facility could operate the two boilers and two hot oil heaters at the maximum rated natural gas combustion capacity of the equipment without causing or contributing to a violation of a national ambient air quality standard and without exceeding any applicable TAP's threshold. Therefore, no further compliance demonstration is necessary.**

2. **Contrary to statements of IDEQ in Section 6.14, Page 10 of the Air Quality Permitting Statement of Basis, it is not possible to over-fire the fuel burning equipment. It is unsafe to operate the equipment over the manufacturer's rated capacity and the equipment is installed with safety devices to prevent this hypothetical situation from occurring. This safety equipment is inspected and certified annually. Permit conditions imposed to address an impossible and hypothetical situation are inappropriate and unnecessary. Predicted formaldehyde impacts conform to applicable TAP's thresholds and do not warrant further compliance demonstration. Please delete the natural gas throughput limits.**

3. **Except for the CB500 boiler (because it can combust waste oil), all other combustion devices at the site are exempt from permit to construct requirements based on heat input capacity. Although this exemption does not apply for Tier II permitting it is presented here to illustrate that these are very minor emission sources that do not warrant a significant monitoring requirement to document compliance.**

Response to 6: Based on the information in the operating permit application, the potential formaldehyde modeled concentrations are very close to the acceptable ambient concentration for carcinogens increment specified in IDAPA 58.01.01.586.

The safety devices that prevent overfiring of the boilers were not included in the original permit application and have not been evaluated or regulated in the processing of this permit. To include the safety devices in the permit, a new application is required.

Comment 7: **Section 3.16 – CB500 Compliance Test**

The wording of this requirement can be interpreted to mean that we are required to begin combustion of waste oil in the CB500 boiler within 180 days after initial startup of the boiler. We suggest changing "initial startup" in the first sentence of this section to "beginning combustion of waste oil in the CB500 boiler" or similar.

Response to 7: This permit condition is based on 40 CFR 60 Subpart Dc, Standards of Performance for small steam-generating units. The DEQ does not have delegation to make determinations about variations from the timelines specified in these regulations. In order to modify the compliance test timelines, the facility must obtain authorization from the EPA in writing. Carole Zundel of DEQ spoke to Heather Valdez of Region X EPA on December 17, 2003 and verified that EPA may grant a compliance testing timeline extension if the extension is requested in writing from the facility with an explanation of the circumstances. After an extension has been granted, an application for a modification of the permit can be submitted to DEQ requesting that the permit condition be modified to incorporate the EPA's extension.

Comment 8: **Section 3.17 – CB500 Boiler Test Sulfur Content**

We request that you change the following text of the last sentence of this section from "the operation of the" to "combusting waste oil in" to prevent confusion regarding compliance.

Response to 8: This requirement also is based on 40 CFR 60 Subpart Dc. See Response to 7.

Comment 9: **Asphalt Emulsion and Cutback Mixing and Distribution**
Section 4.1 – Process Description

We suggest the following changes to the second paragraph of this section to more accurately describe process operations at the facility.

There are natural-gas-fired hot oil heaters and two boilers, one fired on natural gas exclusively and one fired on natural gas or on waste oil, for the purpose of generating heat, which keeps the normally solid asphalt warm enough to be mixed and pumped (see Section 3 of this permit). The asphalt is stored at 330 to 380 °F prior to mixing. The asphalt emulsion with fuel content is stored at 150 °F and the asphalt emulsion with water content is stored at 200 °F. Tanks 49 and 50 can be used for storage of asphalt emulsion with either fuel content or with water content. The ambient impact analysis was performed assuming asphalt emulsion with fuel content would be stored in these tanks, storage of asphalt emulsion with water content will result in lower emissions of VOCs. The cutback is stored at 280°F.

Response to 9: The temperature descriptions will be removed from this section because storage temperatures are already specified in Table 1.1. The information about Tanks 49 and 50 is not required (See Response to 1).

Comment 10: **Section 4.2 – Breathing Loss Control Valves**

Although this condition was included in the original PTC issued for our facility, it is not clear what the basis for this permit condition is. Applying this permit condition to Tanks 7, 8, and 9 is not appropriate since these tanks are asphalt storage tanks. Our tank emissions for this permit were determined considering Tanks 2, 22, 23, 25, 27, and 29 were fitted with 0.5-ounce vacuum/pressure control valves while the remaining tanks vented freely without pressure control valves.

Response to 10: This Tier II operating permit incorporates and replaces all previous permits, including previous permit conditions. The Tier II application did not include a request for the removal of this requirement. In the PTC/Tier II application, Section 2.0, Tier II, Pages 5-7 through 5-12, shows that Tanks 7, 8, and 9 have pressure relief valves. This proposed modification requires additional technical analysis and review and is a change of scope from the application on which this permit is based. In order to be considered, this change must be proposed in a new permit application which includes the information specified in IDAPA 58.01.01.202.

Comment 11: **Section 4.3, 4.5, 4.8, and 4.9 – Benzene Emission/Throughput Limits and Monitoring and Record Keeping Requirements**

We request that permit conditions related to benzene emissions and benzene throughput limits be deleted from the permit. Air dispersion modeling, submitted to the IDEQ June 30, 2003, demonstrated that no individual emission source operating at the maximum potential to emit would result in exceedance of the acceptable ambient concentration for carcinogens (AACC)

for benzene. The DEQ's interpretation of the Idaho air regulations was that the cumulative predicted ambient impact from all the sources should be compared to the benzene AACC and not just the contribution from individual emission sources that our analysis considered. Idaho Asphalt disagreed with the reading of the applicable regulations but performed cumulative modeling at DEQ's request. In light of the initial results of this cumulative modeling, benzene emission limits were developed to respond to DEQ's interpretation of the regulations. Idaho Asphalt restates that the appropriate demonstration of TAPs impact was provided to IDEQ with the June 30, 2003 modeling of individual sources. This approach is consistent with the intent and implementation of the TAPs regulations. Therefore, enforceable benzene emission limits and throughput values are inappropriate. We request deletion of those conditions of the proposed permit.

Response to 11: Because the tank sizes and throughputs were increased from the as-built size to a surrogate worst-case-emissions size and throughput for permitting purposes was also increased, this increase in size and throughput results in a hypothetical increase in potential emissions for this project. The TAPs increments apply to increases for a project. In this case, the project includes an increase in size and throughput of many tanks, and, due to confidential business information concerns, the original sizes and throughputs were not included, so the original emissions could not be subtracted to determine the actual incremental increase. Therefore, all emissions were determined to be an incremental increase. A modified permit application can be submitted which includes the actual sizes and throughputs of the tanks in order to calculate the incremental increase of this project which may or may not change the analysis conclusions and permit conditions. However, such actual tank dimension information might lose its confidential business information status.

Comment 12: **Section 4.5, Table 4.2 – Throughput Limits for Tanks and Loading Racks**

The values currently listed in Table 4.2 for benzene are emissions not throughput values as the heading implies. Benzene throughput values that result in the listed benzene emissions are as follows (see Attachment B – Benzene Throughput Calculations):

Tank or Loading Rack	Benzene Emissions (lb/yr per tank or rack)	Benzene Throughput (gal/yr per tank or rack)
Tank ID: 22, 23	0.93	1.97
Tank ID: 49, 50	27.85	126
Loading Rack #4 (in draft permit as #3)	3.5	29.6
Loading Rack #5 and #6	1.8	252
Loading Rack #8	2.3	19.7

Also, replace "#1 diesel" with "933,420 gallons/yr" for Tank ID 25, 27 under the category "Product Throughput per tank or loading rack".

Response to 12: The diesel throughput value will be specified in the table.

The benzene throughput values will be listed. In addition, because the benzene throughput is representative of the benzene emissions, the benzene emission rates and tracking requirements will be eliminated. The TANKS input parameters, other than benzene throughput, are not required to be tracked. Therefore, the TANKS benzene emission output will not exceed the value used for the analysis of the permit as long as the benzene throughput limit is not exceeded.

Comment 13: **Section 4.8 – Benzene Compliance Monitoring and Reporting**

Replace "emissions" with "throughput" at the end of the first sentence. Monitoring and recording throughput of benzene containing products and calculating the benzene throughput should be sufficient to demonstrate compliance for benzene emissions (if required in the final permit).

Response to 13: See Response to 12.

Responses to the comments received from Lyle and Ann Marie Campbell on December 9, 2003 are provided below:

General

Comments regarding the permitting action are summarized and addressed here. A copy of the letter is attached.

Comment 14: **Rolling the smaller permit(s) into a larger one will allow more tanks and more problems.**

Response to 14: No new tanks are being permitted. This permit is being written to describe the existing tanks using sizes and throughputs that represent a worst-case scenario. The emissions from this worst-case scenario are estimated, modeled (to show compliance with applicable standards), limited, where necessary, and monitored (by monitoring throughputs as a surrogate). The actual equipment has not changed as a result of this permit. Any new equipment will be subject to the Rules for the Control of Air Pollution in Idaho (IDAPA 58.01.01)(*Rules*) and may require an additional or modified permit.

Comment 15: **(By issuing this permit), DEQ is allowing potential problems to continue. One problem is that odors are not being adequately controlled.**

Response to 15: Permits are issued for facilities which demonstrate compliance with the *Rules* in the permit application. Deviations from the *Rules* and/or the operating permit conditions can be addressed in a compliance action. For odor control, Permit Condition 2.5 states, "The permittee shall not allow, suffer, cause, or permit the emission of odorous gases, liquids, or solids to the atmosphere in such quantities as to cause air pollution." To assess compliance with this permit condition, Permit Condition 2.6 states, "The permittee shall maintain records of all odor complaints received. If the complaint has merit, the permittee shall take appropriate corrective action as expeditiously as practicable. The records shall, at a minimum, include the date that each complaint was received and a description of the following: the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken."
In addition, in response to the concerns expressed in your letter, a permit condition will be added to the operating permit that requires the facility to submit to the Department of Environmental Quality an odor management plan within 60 days of the issuance of this permit.

A copy of the Department of Environmental Quality's Policy for Responding to Odor Complaints is attached to this Response to Comments and can also be accessed on the DEQ web site at http://www.deq.state.id.us/policies/policies.htm under PM00-6. These procedures specify the process DEQ will follow to resolve odor complaints received by DEQ and to ensure compliance with existing regulations. These procedures also ensure odor complaints are referred to the appropriate public entity for action. These procedures address odor complaints with appropriate and increasing DEQ intervention up to and including the filing of a civil action in appropriate circumstances.

Comment 16: **Does Idaho Asphalt comply with the State Fire Code?**

Response to 16: An evaluation of the state fire code is not part of the air quality regulations.

Comment 17: **Does DEQ assess the cumulative impact of highly volatile or hazardous facilities in the area when permitting a new volatile facility?**

Response to 17: This permit is issued in accordance with the regulations specified in IDAPA 58.01.01. Idaho Asphalt Supply, Inc., is a minor facility, and an analysis of co-contributing sources is therefore not required.

DEQ Policy Memorandum

Policy No.: PM00-6

Policy for Responding to Odor Complaints

Forward

The Idaho Department of Environmental Quality (DEQ) Procedures for Responding to Odor Complaints (Procedures) set forth herein are intended solely as guidance for use by DEQ. These Procedures are not intended to, nor do they, constitute a rulemaking by DEQ. These Procedures do not create any rights or benefits, substantive or procedural, enforceable at law or in equity, by any person. Nothing in these Procedures shall be construed to constitute a valid defense by regulated parties in violation of any state or federal environmental statute, regulation or permit. DEQ reserves the right to be at variance with the contents of these Procedures and to change these Procedures at any time without public notice.

Statement of Purpose

These Procedures specify the process DEQ will follow to resolve odor complaints received by DEQ and to ensure compliance with existing regulations. These Procedures also ensure odor complaints are referred to the appropriate public entity for action. These Procedures address odor complaints with appropriate and increasing DEQ intervention up to and including the filing of a civil action in appropriate circumstances.

Definitions

The following definitions are relevant to these Procedures:

Air pollution is defined (IDAPA 58.01.01.006.05) as "[t]he presence in the outdoor atmosphere of any air pollutant or combination thereof in such quantity or such nature and duration and under such conditions as would be injurious to human health or welfare, to animal or plant life, or to property or to interfere unreasonably with the enjoyment of life or property."

Air pollutant/air contaminant is defined (IDAPA 58.01.01.006.04) as "[a]ny substance, including but not limited to, dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon or particulate matter or any combination thereof."

Odor is defined (IDAPA 58.01.01.006.64) as "[t]he sensation resulting from stimulation of the human sense of smell."

Valid Complaint, as that term is used in these Procedures, is defined as any odor complaint received by DEQ and determined by DEQ pursuant to the Odor Determination Process outlined in these Procedures, to meet or exceed the level at which DEQ regulations applicable to the odor source provide DEQ with authority to regulate the odors. DEQ will consider odor complaints arising from a single, short term odor-causing incident to be a single complaint. DEQ will consider odor complaints arising from distinct, independent odor causing incidents as separate complaints. DEQ staff shall have discretion to consider ongoing odor complaints arising from normal source operations as a single event, or as separate complaints, based on timing of the complaints, responsiveness of the source, stage of implementation of an odor management plan, and on other relevant factors.

Relevant DEQ Authorities

1. **Rules for the Control of Air Pollution in Idaho.** The purpose of Sections 775 through 776 is to

control odorous emissions from all sources for which no gaseous emission control rules apply. IDAPA 58.01.01.775. Section 776 states, "[n]o person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids into the atmosphere in such quantities as to cause air pollution." IDAPA 58.01.01.776.

Specific rules providing restrictions on odorous emissions from rendering plants and associated processes (cooker, expellers, plant air) are found at IDAPA 58.01.01.776.02 and IDAPA 58.01.835 through 839.

2. Water Quality Standards and Wastewater Treatment Requirements. Certain non-exempt wastewater generating facilities which land apply wastewater as a treatment alternative are required to be permitted, as specified in IDAPA 58.01.02.600.01. Section 600.03 states, "Hazard or Nuisance Prohibited. Waste waters must not create a public health hazard or a nuisance condition." IDAPA 58.01.02.600.03. This regulation is reiterated as a standard condition in all Wastewater Land Application Permits.

3. Rules Regulating Swine and Poultry Facilities. The Rules Regulating Swine and Poultry Facilities state, "The source or operations associated with the source shall not create a public health hazard or nuisance condition including odors." IDAPA 58.01.09.400.03.c.

4. Solid Waste Management Regulations and Standards. The Solid Waste Management Regulations and Standards state, "Solid Wastes shall be managed such that they shall not cause or contribute to the pollution of air." IDAPA 58.01.06.04.02(b)

Relevant Authorities of Other Public Entities

1. Pursuant to the Interagency Agreement between Idaho State Department of Agriculture (ISDA) and DEQ addressing Animal Waste Management, DEQ will refer odor complaints specific to animal feeding operations to the ISDA.

2. Pursuant to the MOU between DEQ and the Health Districts, DEQ will refer odor complaints specific to solid waste facilities to the Health District in which the source is located.

3. DEQ will refer odor complaints specific to pets or the presence of other livestock in residential areas to the appropriate city or county authority to check compliance with zoning regulations.

Note: Responsibility for determining compliance with ambient environmental criteria remains the responsibility of DEQ.

Odor Complaint Process

DEQ will act as follows when an odor compliant is received:

1. Notification of Receipt of Odor Complaint. When received, DEQ will refer the complaint to the appropriate DEQ Regional Office. DEQ will notify the alleged odor source, the County Commission in both the county in which the source is located, and the county in which the complainant resides of the complaint.

2. Complaints of Odor Sources Regulated Primarily by Other Public Entities. DEQ will refer to the appropriate public entity complaints specific to a source primarily regulated by another public entity. When referring such complaints to other public entities, DEQ will request that the other public entity provide the DEQ with a written response outlining those actions taken by the public entity, and or the alleged odor source, with respect to the complaint.

The appropriate DEQ Regional Office may, upon receiving multiple complaints regarding a source regulated primarily by another public entity, investigate the source to determine compliance with air quality and water quality regulations. The DEQ investigation will include a file search for previous

complaints, and may include a site visit. The DEQ Regional Office will prepare, and forward to the appropriate public entity, an Investigation Report. After considering information discovered during the investigation, and summarized in the Investigation Report, the DEQ Regional Office may forward an enforcement referral package to the DEQ State Office.

3. First Complaint of a Source Regulated Primarily by the DEQ. When the DEQ receives an odor complaint specific to a source regulated primarily by DEQ, and if the complainant(s) agrees to disclosure of his or her identity, the DEQ Regional Office will contact the source and, whenever practicable, encourage a meeting between the source, the complainant, and the DEQ Regional Office.

If the complainant(s) does not desire to meet, or is not satisfied with the outcome of the meeting, then the DEQ Regional Office will conduct an investigation of the source. As part of the investigation, the DEQ Regional Office will conduct a file search for previous complaints, will determine the validity of the complaint pursuant to the Odor Determination Process outlined in these Procedures, and will determine compliance with any existing source odor management plan. The DEQ Regional Office may prepare an Investigation Report regarding the investigation into the complaint.

DEQ will act as follows with respect to a valid complaint:

A. For facilities with an odor management plan, and operating in compliance with the plan, the DEQ Regional Office will request the voluntary modification of the plan to specifically address the identified odor.

B For facilities with an existing odor management plan, but not operating in compliance with the plan, or otherwise in violation of an DEQ permit or authority, the DEQ Regional Office may forward an enforcement referral package to the DEQ State Office.

C. For facilities without an odor management plan, the DEQ Regional Office will request the voluntary development and implementation of an odor management plan.

Upon determining an odor complaint does not constitute a new valid complaint, DEQ will inform the alleged odor source and, whenever practicable, the complainant(s) of the DEQ's determination.

4. Second Complaint of a Source Regulated Primarily by the DEQ. If the DEQ receives a second odor complaint with respect to the same source, the DEQ Regional Office will conduct an investigation of the source. As part of the investigation, the DEQ Regional Office will conduct a file search for previous complaints, will determine the presence of a second separate valid complaint pursuant to the Odor Determination Process outlined in these Procedures, and will determine compliance with any existing source odor management plan. As part of the Investigation, the DEQ Regional Office may issue an information order (IDAPA 58.01.01.122) to the alleged odor source for the purpose of determining whether the source is in violation of any DEQ rule, or any requirement of the Rules for the Control of Air Pollution in Idaho. The DEQ Regional Office will prepare an Investigation Report regarding the investigation into the complaint.

DEQ will act as follows with respect to a second separate valid complaint:

A. For DEQ-permitted facilities with an existing odor management plan, and operating in compliance with the plan, the DEQ Regional Office will require the modification of the plan to specifically address the identified odor.

B. For DEQ-permitted facilities with an existing odor management plan, but not operating in compliance with the plan, or otherwise in violation of an DEQ permit or authority, the DEQ Regional Office may forward an enforcement referral package to the DEQ State Office.

C. For DEQ-permitted facilities without an existing odor management plan, the DEQ will

require the source to develop and submit for DEQ approval an appropriate odor management plan to be incorporated into the source's DEQ permit.

D. For facilities not subject to a DEQ permit, and for which no odor management plan exists, DEQ will request the voluntary development and implementation of an odor management plan.

Upon determining an odor complaint does not constitute a second separate valid complaint, the DEQ will inform the alleged odor source and, whenever practicable, the complainant(s) of the DEQ's determination, and of any action taken by DEQ following the second valid complaint.

5. Third Complaint of a Source Regulated Primarily by the DEQ. Upon receipt of a third odor complaint with respect to the same source, the DEQ Regional Office will conduct an investigation of the source. In conducting the investigation, the DEQ Regional Office will conduct a file search for previous complaints, will determine the presence of a third separate valid complaint pursuant to the Odor Determination Process outlined in these Procedures, and will determine compliance with any existing source odor management plan. As part of the Investigation, the DEQ Regional Office may issue an information order (IDAPA 58.01.01.122) to the alleged odor source for the purpose of determining whether the source is in violation of any DEQ rule, or any requirement of the Rules for the Control of Air Pollution in Idaho. The DEQ Regional Office will prepare an Investigation Report regarding the investigation into the complaint.

DEQ will act as follows with respect to a third separate valid complaint:

A. For DEQ-permitted facilities with an existing odor management plan, and operating in compliance with the plan, the DEQ Regional Office will require the modification of the plan to specifically address the identified odor.

B. For DEQ-permitted facilities with an existing odor management plan, but not operating in compliance with the plan, or otherwise in violation of an DEQ permit or authority, the DEQ Regional Office may forward an enforcement referral package to the DEQ State Office.

C. For facilities not subject to a DEQ-issued permit, and for which no odor management plan exists, DEQ will request the development and implementation of an odor management plan. If a source fails to develop and implement an odor management plan, the DEQ Regional Office may forward an enforcement referral package to the DEQ State office.

Upon determining a complaint does not constitute a third separate valid complaint, DEQ will inform the alleged odor source and, whenever practicable, the complainant(s) of DEQ's determination, and of any action taken by DEQ following the second valid complaint.

6. Enforcement Referral to the State Office. The DEQ State Office will review all enforcement referral packages to determine an appropriate response. An appropriate response may include, but is not limited to, meeting with the source, entering into a Consent Order, issuance of a Notice of Violation, or the filing of a civil suit. In determining the appropriate response, the DEQ State Office will consider several factors, including, but not limited to, the scope, frequency and duration of the odors, the effect on human health and the environment, and ongoing source efforts to address odors. When the DEQ State Office receives an enforcement referral package, the DEQ State Office will, very early in the process, consult with the Office of the Attorney General regarding the facts of the given odor concern.

Odor Determination Process

1. Two members of the DEQ compliance staff trained in odor detection will jointly make an odor determination.

2. Utilizing their odor detection training, the two DEQ compliance staff members will determine if, at the down wind source property boundary or beyond, odor levels meet or exceed the level at which regulations applicable to the odor source provide the DEQ with authority to regulate odors.

3. The two DEQ compliance staff members will determine if the detected odor is specific to the alleged odor source by conducting odor detection at a location up-wind, or at any other relevant location, of the alleged odor source.

4. The two DEQ compliance staff members will document their determinations, and the means by which the determinations are made, together with all other relevant information, in an odor determination report.

Implementation

These Procedures shall be effective immediately.

_____

C. Stephen Allred
Director